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U. S. DEPARTMENT OF AGRICULTURE.

BUREAU OF PLANT INDUSTRY—BULLETIN NO. 233.

B. T. GALLOWAY, *Chief of Bureau.*

SEEDS AND PLANTS IMPORTED

DURING THE PERIOD FROM JANUARY 1 TO MARCH 31, 1911:

INVENTORY No. 26; Nos. 29328 TO 30461.

ISSUED FEBRUARY 20, 1912.

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BUREAU OF PLANT INDUSTRY.

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FOREIGN SEED AND PLANT INTRODUCTION.

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LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Bureau of Plant Industry,
Office of the Chief,
Washington, D. C., September 26, 1911.

Sir: I have the honor to transmit herewith and to recommend for publication as Bulletin No. 233 of the series of this Bureau the accompanying manuscript, entitled "Seeds and Plants Imported during the Period from January 1 to March 31, 1911: Inventory No. 26; Nos. 29328 to 30461."

This manuscript has been submitted by the Agricultural Explorer in Charge of Foreign Seed and Plant Introduction with a view to publication.

Respectfully,

B. T. Galloway,
Chief of Bureau.

Hon. James Wilson,
Secretary of Agriculture.

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SEEDS AND PLANTS IMPORTED DURING THE PERIOD FROM JANUARY 1 TO MARCH 31, 1911: INVENTORY NO. 26; NOS. 29328 TO 30461.

INTRODUCTORY STATEMENT.

Following a custom established in 1898, we have gone through this inventory of 1,134 introductions and singled out such as are likely to interest in an unusual way the plant experimenters of the country. This should not be taken to mean that the most important have been included, for experience has often demonstrated in this plant-introduction work the truth of the Biblical saying, "The stone which the builders rejected is become the head of the corner."

Western Chinese Turkestan is a land of oases and deserts. It is accessible only to caravans which follow more or less well-defined trails across it, and this fact alone would make any plants coming from it of peculiar interest. When these have been collected by one who has such a wide acquaintance with our own arid and irrigated regions as has our explorer, Mr. Frank N. Meyer, they become of unusual value. His Chinese Turkestan collection in this inventory (Nos. 30042 to 30060, 30141 to 30153, 30308 to 30364, and 30393 to 30415) includes a large number of promising table-grape varieties; two extremely alkali-resistant species of Tamarix; a remarkable collection of poplars, among them the desert poplar (*Populus euphratica*, No. 30054), which should be adapted to our western plains; the Karagatch elm (No. 30060) from the oases of Sandju; a number of interesting willows; a large collection of sweet-kerneled and bitter-kerneled apricots, remarkable for their resistance to cold and alkali; several new forms, among them a white variety, of the Chinese plum-cherry (*Prunus tomentosa*), which Mr. Meyer thinks is deserving of consideration as a dry-land fruit; the celebrated Kutcha pear, a fine variety of the Chinese species (*Pyrus chinensis*); several noteworthy varieties of peaches, nectarines, prunes, plums, apples, and oriental pears; a yellow-flowered alfalfa grown near Pustan Terek at an altitude of 7,000 feet; a collection of the watermelons and muskmelons of the region; and a large-fruited form of the extremely drought and cold resistant oleaster, which plant has been found to be specially suited to our Great Plains area.

Possibly some amateur who has seen the thousands of unutilized May apples which grow in our eastern forests might like to try some experiments in breeding them with the Himalayan species (*Podophyllum emodi*, No. 29328). A cherimoya from an altitude of 5,000 feet in Mexico, as large as a coconut, a good shipper, and selling locally for 25 cents apiece, will interest California and Florida growers who are experimenting with this promising fruit (No. 29350). *Talauma mutabilis* (No. 29358) from Java, though a strictly tropical species, is closely enough related to the magnolias to suggest that, owing to its gorgeous yellow flowers, it is worth trying to hybridize it with our white-flowering hardy species. To those who still believe, as we do, that the mangosteen needs a stock plant, the bitter kola (*Garcinia kola*, No. 29362) of Nigeria, as well as a wild species of Garcinia from Brazil (No. 30225), will be of interest. In an attempt to obtain varieties of tobacco which will resist the wilt disease that threatens a wide area of tobacco land in the South, we have continued the introduction of as many types of tobacco from Cuba, Central America, and Mexico as can be found, a number being included in this inventory.

The probable development of persimmon growing as a great fruit industry has warranted us in continuing our search for as many species as possible which have any likelihood of usefulness to the breeder, and this inventory announces the introduction of the ebony tree of Ceylon (No. 29384); a seedless and puckerless chance seedling from Florida (No. 29329); the black tsao (*Diospyros lotus*, No. 29486) from Tientsin; and a nonastringent Japanese variety (No. 30066).

One of the largest and rarest dates and, justly, the most celebrated date of Tunis is the Menakher, which was studied by Mr. Thomas H. Kearney several years ago in the oases of Tunis. No. 29391 represents a shipment of 1,000 pounds of this remarkable date imported in order to obtain the seed for date planters in the Southwest.

The Abyssinian clovers have attracted the attention of at least one breeder in America, so he, and probably others, will be interested in 11 strains collected by the American vice consul general at Addis Abeba (Nos. 29392 to 29403). As an ornamental vine, *Cissus capensis* (No. 29408) is worthy of special attention, for as now growing on Mr. H. E. Huntington's place in Pasadena it is certainly a most promising plant for southern California. A peculiar interest would be attached to the cotton seeds (Nos. 29411 and 29412) by American cotton growers if they realized that Mesopotamia, the country of their origin, is likely to be one of the great cotton-producing regions of the world as soon as Sir William Willcocks finishes his great irrigation scheme on the Tigris.

The growth in popularity in America of the casaba, or winter muskmelon, will make the description of cultural methods employed in Malta of interest to the specialist in this new winter fruit (No. 29458).

The success of our experiments in cultivating colocasias in the South makes the introduction of the southern Chinese short-season forms from Canton of interest (Nos. 29482 and 29483), as also a collection from Surinam of colocasias and xanthosomas (No. 29517 to 29520) and a xanthosoma from Canton (No. 30422).

The nanmu tree of the Yangtze Valley may not be hardy outside of Florida and California, but being one of the best timber trees of China, and being on the high road to extermination, it would be well to ascertain whether it can be grown here (No. 29485).

The possibility of growing North Chinese white ginger has attracted our attention, since it is a shorter season crop than the noted Canton ginger. For this purpose plants from the Shantung Province have been imported (Nos. 29529 and 29990).

During his brief stay in Japan, Dr. B. T. Galloway called attention to *Pasania cuspidata* (No. 29533), an evergreen oak which he believes could be used as a hedge plant throughout the South and from northern California northward on the Pacific coast.

Mr. Walter T. Swingle's researches into the relationships of the citrus group and the value of various species for breeding purposes have called to our attention in the deserts of northeastern Australia a remarkable plant, *Atalantia glauca*, having scanty gray-green foliage and small edible fruit, which withstands both drought and cold to a remarkable degree. It is probably the hardiest of all evergreen citrus fruits and is likely to go through warm spells in winter without starting into growth.

Those interested in obtaining plants better suited for cultivation about city homes will find the caraganas (Nos. 29960 to 29962), the barberries (Nos. 29957 to 29959), and the cotoneasters (Nos. 29963 to 29971) sent us by the director of the Kew Gardens of special value; also species secured by Mr. José D. Husbands in Chile (Nos. 30068 to 30079), and the wild roses from Dr. Veit Wittrock in Sweden (Nos. 30254 to 30263). Mr. Aaron Aaronsohn has sent cuttings of the *Pyrus syriaca* (No. 29994) from Palestine, which he recommends from long experience as a stock for early pears in arid soil, and Dr. L. Trabut has sent three dry-land wild pears from Algeria (Nos. 30031 to 30033).

The claims of the edible-fruited Strychnos, of which there are several varieties in East Africa, have been emphasized by the fruiting of *Strychnos spinosa* in Florida and the discovery of its remarkable shipping quality and the almost complete freedom from poison of its seeds. Two new forms (Nos. 30025 and 30026) from Amani have been introduced.

Those interested in *Medicago falcata* as a plant for pastures and ranges should have their attention called to Dr. N. H. Nilsson's statement regarding its value in Sweden. The alfalfa breeders will be glad to learn of the introduction of the promising *Medicago*

cancellata (No. 30061), a forage plant of promise which, as yet, has been untried in this country.

American growers of the mango will be interested in several new varieties of this fruit imported from Poona (Nos. 29504 to 29513) and from Lucknow (Nos. 30085 to 30089). The fact that *Eucommia ulmoides* (No. 30137) is hardy as far north as Boston, that it plays an important rôle in Chinese medicine, and that the rubberlike substance which its leaves and bark contain is being thoroughly investigated as a commercial possibility makes the securing of a large quantity of seed through Mr. E. H. Wilson of unusual interest.

Dr. Trabut's hybrid sisal (Nos. 30189 and 30190), which it is claimed is more cold resistant than the ordinary sisal and has more abundant and finer fibers, can not fail to be of great interest to fiber experts, while a collection of sorgos from the Governor of Togoland, German West Africa, may add some valuable varieties to those already growing in America.

The manuscript for this inventory has been prepared by Miss Mary A. Austin and the botanical determinations made by Mr. H. C. Skeels, under the direction of Mr. Frederick V. Coville, of the Office of Taxonomic and Range Investigations.

David Fairchild,
Agricultural Explorer in Charge.

Office of Foreign Seed and Plant Introduction,
Washington, D. C., September 22, 1911.

INVENTORY

29328. PODOPHYLLUM EMODI Wall.

From Sibpur, Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received January 3, 1911.

"Fruit edible as in American species (*Podophyllum peltatum*). Probably like this can be used as a purgative and hepatic stimulant." (*Von Mueller.*)

See No. 22552 for previous introduction.

Distribution.—Slopes of the interior ranges of the Himalayas at an elevation of 6,000 to 14,000 feet, between Hazara and Sikkim, northern India.

29329. DIOSPYROS sp. **Persimmon.**

From Waldo, Fla. Presented by Mr. T. K. Godbey. Received January 4, 1911.

Godbey's Seedless. Said to be a luscious persimmon that is absolutely puckerless.

29330. CYCLANTHERA PEDATA (L.) Schrad. **Caigua.**

From Mollendo, Peru. Presented by Mr. William Morrison, American consular agent. Received January 4, 1911.

"The fruit of the caigua is eaten as a vegetable. My cook informs me that the fruit is first cleaned of the seeds and the division that separates the rows, then boiled, but not too tender; a forcemeat composed of finely chopped meat, raisins, walnuts, and chopped hard-boiled eggs, with seasoning, fills the interior; the outside is covered with a mixture of beaten egg and flour, and the caiguas are then fried; or a sauce is made with milk, flour, etc., and in this the caigua is stewed." (*Morrison.*)

See No. 3096 for previous introduction.

Distribution.—From the region of Orizaba in southern Mexico southward through Guatemala and Colombia to Peru.

29331 and 29332.

From Brazil. Presented by Mr. Walter Fischer, acting director, Campo de Cultura Experimental Paraense, Para, Brazil. Received January 5, 1911.

Seeds of the following; notes by Mr. Fischer:

29331. CARICA PAPAYA L. **Papaya.**

"Seeds of what is probably our best variety of *mamão*. The specimen I had must have been 17 or 18 inches long and weighed 9 pounds. I have seen slightly larger ones from the same plant. The fruit was of excellent flavor and contained but few seeds. In a year or even 10 months it is possible to obtain ripe fruits from the papaya in this climate. Here in Belem a papaya like the one described sells for at least a dollar."

29332. CUCUMIS MELO L. **Muskmelon.**

"Seeds of a muskmelon, the only kind seen in the markets of Belem, but even this is not grown near here, but in Santarem, about 500 miles up the river. The fruit of this variety is long, smooth, and distinctly ribbed; the flesh is orange colored and of very good flavor. This particular specimen weighed 14 pounds, which is the average weight. It is probably needless to advise

29331 and 29332—Continued.

planting it in the tropical or subtropical regions and growing it in the dry season. Here in Belem these melons sell for from $1 to $2."

29333. MANGIFERA INDICA L. **Mango.**

Plants growing at the Subtropical Garden, Miami, Fla. Numbered January 7, 1911.

Haden. "A seedling of a *Mulgoba* mango planted by the late Capt. F. P. Haden and now growing on the Mathams estate, at Cocoanut Grove, Fla. It fruited in 1910 for the first time and promises to be one of the most valuable accessions to our mango collection. The bud wood from which the plants at Miami were grown was furnished by Mr. Kirk Munroe, of Cocoanut Grove, Fla." (*H. F. Schultz.*)

"General form of fruit roundish, $4\frac{1}{8}$ by $3\frac{7}{16}$ by $3\frac{1}{2}$ inches; beak V-shaped, about 1 inch from vertical center of fruit; skin thick, tenacious, surface moderately smooth, greenish yellow to rich yellow, with bright-scarlet blush; bloom profuse, whitish; flesh deep, rich yellow, buttery, juicy, with but little fiber, sweet, rich, very good; seed medium size, flat oval, cling." (*W. N. Irwin.*)

29334. ONONIS ANTIQUORUM L.

From Palestine. Presented by Mr. E. F. Beaumont, American Colony, Jerusalem, Palestine. Received January 6, 1911.

"Seed of a wild perennial plant of the pea family, which grows absolutely everywhere on poor, rocky soil as well as on good ground and which is the deepest rooted plant, next to alfalfa, that grows in the country; it is quite equal to alfalfa in rooting quality. It has a thorn 1 to 2 centimeters long. This plant is greedily eaten by all cattle when it is young and the thorn is tender, but when full grown they can not manage the thorn.

"We are very ignorant about such matters, but we have thought that if this thorn could be bred off, the Ononis would make a splendid forage plant, as it grows so well on rocky ground on which nothing else will thrive.

"In the Jordan Valley, owing to the very low altitude, plant life is more or less active at all seasons. We found the Ononis growing abundantly along the ditches that bring the water from Elisha's Spring to the irrigated land. About 4 feet was the average height, though some bushes were 5 feet. What interested us most was to see how, after bearing seed, the plant, like the alfalfa, sends out new shoots, some of which were 28 inches long and of a beautiful, tender growth without the first sign of a thorn. We gathered some of this and brought it to our cows, which ate it greedily." (*Beaumont.*)

29335. QUERCUS SUBER L. **Cork oak.**

From the Almoraima woods, 15 miles north of Gibraltar, Spain. Procured by Mr. R. L. Sprague, American consul. Received January 7, 1911.

See Nos. 2665 and 4323 for notes on this species.

29336. EUGENIA sp.

From Paraguay. Presented by Mr. C. F. Mead, Cahi Puente, Paraguay. Received January 5, 1911.

"Called in Guarany 'ïba jhai' (ï-ba-ï). A wild fruit about the size of an apricot and meat similar in color and taste. Outside appearance similar to quince. Very acid and used to some extent for preserves, but principally as food for wild animals in the forests. Borne on a tree which grows to a height of 10 meters and is very similar in looks to the olive; wood excellent for furniture. It bears profusely; each fruit contains from one to three seeds. Found in all parts of Paraguay." (*Mead.*)

29337. CANARIUM PANICULATUM (Lam.) Benth.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received January 6, 1911.

A splendid, erect forest tree growing 30 to 50 feet high.

Distribution.—In the forests on the slopes of the mountains in the interior of the island of Mauritius.

29338. PASSIFLORA EDULIS Sims. **Passion flower.**

Presented by Mr. A. R. Krueger, Burn Brae Plantation, Stuart, Fla., who received them from a commission merchant in New York. Received January 9, 1911.

29340. CANNABIS SATIVA L. **Hemp.**

From Hwai Yuan, China. Procured by Dr. Samuel Cochran. Received January 6, 1911.

"*Ho ma.*"

29341. FERONIA ELEPHANTUM Correa. **Wood-apple.**

From Saigon, Cochin China. Presented by Mr. P. Morange, director, Agricultural and Commercial Service, Cochin China. Received January 10, 1911.

See No. 25888 for description.

29342. NICOTIANA TRIGONOPHYLLA Dunal. **Wild tobacco.**

From Cedros, Mazapil, Zacatecas, Mexico. Presented by Dr. Elswood Chaffey. Received January 11, 1911.

Cimarron.

See No. 29172 for distribution of this species.

29343 to 29347. VITIS VINIFERA L. **Grape.**

From London, England. Presented by Rev. W. Wilks, secretary, Royal Horticultural Society. Received January 9, 1911.

Cuttings of the following:

29343. *Ascot Citronelle.*
29344. *Cannon Hill Muscat.*
29345. *Lady Hastings.*
29346. *Muscat Champion.*
29347. *Prince of Wales.*

29348. NICOTIANA TRIGONOPHYLLA Dunal. **Wild tobacco.**

From Cerritos, San Luis Potosi, Mexico. Presented by Dr. C. A. Purpus, Minas de San Rafael. Received January 10, 1911.

"Tobacco de perro, or coyote."

See No. 29172 for distribution of this species.

29349. MEDICAGO HISPIDA DENTICULATA (Willd.) Urb. **Bur clover.**

From Hangchow, China. Purchased from Rev John L. Stuart, Southern Presbyterian Mission. Received January 9, 1911.

29350. ANNONA CHERIMOLA Miller. **Cherimoya.**

From Culiacan, Sinaloa, Mexico. Presented by Mr. W. L. McDaniel, Alvin, Tex. Received January 9, 1911.

" These seeds came from fruits as big as a coconut. The plants grow in Mexico up to an altitude of 5,000 feet, and the fruit stands a week or more on the road. The party who furnished me with the above information also states that efforts to get the fruit at Culiacan for shipment to the United States have failed because the local market eats

29350—Continued.

them up like hot cakes, and it will be years before there will be any to spare for export. A big fine fruit costs 25 to 35 cents Mexican in Culiacan." (*McDaniel.*)

29352. PERSEA AMERICANA Miller. **Avocado.**

Plants growing at the Subtropical Garden, Miami, Fla., from bud wood furnished by Mr. C. O. Richardson, Miami, Fla., November 19, 1910. Numbered January, 1911.

"A first-class, medium-late variety especially suitable for the home garden. The tree is reported by Mr. Richardson as being a dwarf grower, producing crops freely and regularly. The fruits are pyriform in shape, averaging in weight between 750 and 800 grams; the seed is generally a little loose, though sometimes firm in its cavity, and of medium size. The meat is of rich deep-yellow color, greenish next to the skin and of mild, rich, and nutty flavor. The skin is smooth, yellowish green with purplish-red splashes and numerous small dots of bronze; it is thick, tenacious, and slightly adhesive to the meat." (*H. F. Schultz.*)

29355 and 29356.

From Tsinan, Shantung, North China. Presented by Mr. J. S. Whitewright, Tsinan Institute. Received January 16, 1911.

Roots of the following:

29355. (Undetermined.) (Zinziberaceæ.) **White ginger.**

29356. ZIZIPHUS JUJUBA Miller. **Jujube.**

"The dates of this region are of a poor quality." (*Whitewright.*)

29357. POPULUS TREMULA L. **Poplar.**

From Newry, Ireland. Purchased from Mr. T. Smith, Daisy Hill Nursery. Received January 16, 1911.

Seeds. See No. 29098 for previous introduction.

Distribution.—In woods and forests throughout Europe and Russian Asia from the Mediterranean to the Arctic Circle.

29358. TALAUMA MUTABILIS Blume.

From Buitenzorg, Java. Presented by the director, Department of Agriculture, Java. Received January 14, 1911.

"A magnificent yellow-flowered magnolia-like tree, well worthy of introduction." (*Fairchild.*)

See No. 28794 for distribution of this species.

29359. FICUS UTILIS Sim.

From East Africa. Presented by Mr. O. W. Barrett, Director of Agriculture, Lourenço Marquez, Portuguese East Africa. Received March 29, 1909. Numbered January 17, 1911.

"A medium-sized tree of the open bush from Zululand to Somaliland; prefers sandy soil. Almost evergreen except in long droughts. Thick bark used, when beaten out, for bags, clothing, etc.; appears to wear well. Roots well from cuttings. Fruit worthless. Shironga name *M'Pàmah.*" (*Barrett.*)

"A flat-topped or rounded tree, single stemmed by nature, but often cultivated to the extent of being cut off at the ground so as to produce 4 to 6 clean young coppice branches without knots and of rapid growth, from which to obtain fiber; this after preparation is used as cloth. It is the source of all the native cloth in the M'Chopes

29359—Continued.

district. The manufacture of cloth from this tree is confined to M'Chopes, and the cloths are carried to neighboring districts and sold, where the tree itself is abundant, but used only for rough cordage or for caoutchouc. This latter product is yielded abundantly but is of low quality and value. The preference for M'Chopes cloth I can account for only by the local knowledge of the art of coppicing, and the suitable stems produced thereby." (*Extract from Sim: Forest Flora of Portuguese East Africa, p. 100.*)

29360. PASSIFLORA LIGULARIS Juss. **Passion flower.**

From Mexico. Presented by Mr. Richard M. Stadden, vice and deputy consul in charge, Manzanillo, Mexico. Received January 16, 1911.

29362. GARCINIA KOLA Heckel. **Bitter kola.**

From Ibadan, Southern Nigeria, West Africa. Presented by the curator of the Agricultural Department. Received January 16, 1911.

"Vernacular names.—*Efrie* (*uwet*, McLeod), *bitter kola*, *false kola*, *male kola*, *Orogbo kola nut*.

"Tree grows 10 to 30 feet high. Leaves about 6 inches long, 3 inches broad, shining above, paler beneath. Mature fruit about 3 inches long and 2½ inches across, with remains of the styles at the apex and of five imbricate sepals at the base. Rind apricot colored, resiniferous, covering a juicy, orange-acid pulp. Mature seeds 1½ inches long, ¾ inch across, obtuse at both ends, with a brown, parchment-like coat.

"According to Milton (*Jour. Bot., vol. 4, 1875, p. 65*), the newly dried nuts are esteemed by the natives as a remedy in cases of cough, and are said to improve the voice of the singer. The bitter principle is agreeable and free from the astringency of the common red and white kolas, and it imparts to water a pleasant sweet taste. The bitter kola is also said to be a good restorative after seasickness; it is eaten by the natives to enhance the flavor of liquor (*McLeod, Herb. Kew*), and used as a remedy for dysentery (*Monteiro, Mus. Kew*).

"The seeds of the bitter kola do not appear to possess the same stimulating properties as those of the true kola (*Bichea acuminata*), and are of less commercial importance. The fresh nuts of bitter kola (*Garcinia kola*) in West Africa are worth 2*s.* for 200 nuts, while the value of the nuts of *Bichea acuminata* is 3*s.* to 4*s.* 6*d.* for 200 (*von Bernegau in Der Tropenflanzer, 1904*, p. 361)." (*Kew Bul. Misc. Inf., add. ser. 9, 1908, pp. 63–64.*)

Distribution.—Throughout the west coast of Africa from 10° north latitude to 5° south latitude.

29363. PERSEA AMERICANA Miller. **Avocado.**

Plants grown at the Plant Introduction Garden, Chico, Cal., from seed received from Mr. Ed. Simmonds, Subtropical Garden, Miami, Fla., October 20, 1909. Numbered for convenience in recording distribution January 17, 1911.

Avocados to be distributed in southern California to test the hardiness of the southern types in that locality.

29364. TRITICUM AESTIVUM L. **Wheat.**

From Harbin, Manchuria. Presented by Mr. Roger S. Greene, American consul, through the Bureau of Manufactures, United States Department of Commerce and Labor. Received January 18, 1911.

Seed received with samples of flour mentioned in report published in the Daily Consular and Trade Reports, December 2, 1910.

29373. MIMUSOPS ZEYHERI Sond. **Moople.**

From Magaliesberg, Pretoria, South Africa. Presented by Prof. J. Burtt Davy, government agrostologist and botanist, Department of Agriculture, Pretoria. Received January 19, 1911.

"Seed of a tree that has an edible fruit which is slightly astringent and is much eaten by the natives and by white children, but it is not of any particular merit; its taste reminds one a little of acorns. The tree is an evergreen, of shapely habit of growth, and well worth growing as an ornamental. I have no data as to the value of the wood, but that of the closely allied *Mimusops obovata* is described as yellowish white, close grained, tough, heavy, and durable; it is said to be used principally for fellies, axles, and various wagon work.

"This tree grows in the upper bushveld, below 4,000 feet altitude, with a rainfall of about 25 inches, falling in the summer months only; it grows in districts practically free from frost." (*Davy.*)

Distribution.—A large shrub or small tree in the vicinity of Magaliesberg in the Transvaal region of South Africa.

29374 to 29376.

From Magadoxo, Italian Somaliland, Africa. Presented by Prof. J. Burtt Davy, government agrostologist and botanist, Department of Agriculture, Pretoria, South Africa. Received January 19, 1911.

Seeds of the following:

29374. ANDROPOGON SORGHUM (L.) Brot. **Durra.**

"Red. Probably identical with several which have been received from time to time from Abyssinia." (*Carleton R. Ball.*)

29375 and 29376. ZEA MAYS L. **Corn.**

29375. *White Dent.* **29376.** *White Flint.*

"These are useful for certain classes of trade and may be of value in extremely arid parts of the Southwest." (*Davy.*)

29377 to 29379. NICOTIANA TABACUM L. **Tobacco.**

From Cuba. Presented by Mr. F. L. Cervantes, Havana, Cuba. Received January 19, 1911.

Seeds of the following:

29377. From Manicaragua. **29379.** From Yara.

29378. From Remedios.

29380. NICOTIANA TABACUM L. **Tobacco.**

From the Vuelta Abajo district, in the immediate vicinity west of the city of Pinar del Rio, Cuba. Presented by Prof. Ramón Garcia Oses, director, Estacion Experimental Agronómica, Santiago de las Vegas, Cuba. Received January 20, 1911.

Variety *Havanensis.*

29381. ERIOBOTRYA JAPONICA (Thunb.) Lindl. **Loquat.**

From Chile. Received through Mr. José D. Husbands, Limávida, via Molina, Chile, January 21, 1911.

"Of West-Indian origin but grown in Chile from colonial days. Being acclimated in Chile and accustomed to grow semidry to dry, in poor arid soils, it is better suited for American introduction than direct from the rich soil and moisture conditions of the Tropics." (*Husbands.*)

29382. FAGELIA sp.

From the high Cordilleras, Chile. Presented by Mr. José D. Husbands, Limávida, via Molina, Chile. Received January 18, 1911.

"A new, beautiful, and rare calceolaria, found growing in dry sand." (*Husbands.*)

29383. BOUEA GANDARIA Blume.

From Buitenzorg, Java. Presented by Mr. W. G. Gobius, secretary, Department of Agriculture. Received January 20, 1911.

Distribution.—A tree found on the wooded slopes of the mountains in the island of Java, and cultivated in India.

29384. DIOSPYROS EBENUM Koenig. **Ebony.**

From Colombo, Ceylon. Presented by Dr. C. Drieberg, secretary, Ceylon Agricultural Society. Received January 21, 1911.

Distribution.—The eastern part of India and throughout the Malay Archipelago.

29385 to 29387.

From Seharunpur, India. Presented by Mr. A. C. Hartless, superintendent, Government Botanic Gardens. Received January 16, 1911.

Seeds of the following:

29385. ELEUSINE INDICA (L.) Gaertn. **Ragi millet.**

29386. PANICUM MAXIMUM Jacq. **Guinea grass.**

29387. ERAGROSTIS PLUMOSA (Retz.) Link.

Distribution.—Throughout the plains and lower hills of India, in Burma, and Ceylon.

"Nos. 29385 and 29387 are very weedy, and when planting care should be taken to plant only pure seed, as the weeds are usually stronger than the desired plant and the specimens collected often prove to be only weedy grasses instead of the kind desired." (*A. S. Hitchcock.*)

29388 and 29389.

From Smyrna, Turkey. Purchased through Mr. Ernest L. Harris, American consul general. Received January 20, 1911.

Seeds of the following:

29388. VICIA ERVILIA (L.) Willd. **Bitter vetch.**

29389. LINUM USITATISSIMUM L. **Flax.**

Brown seeded.

29390. ANDROPOGON SORGHUM (L.) Brot. **Sorgo.**

From Fort Worth, Tex. Purchased from the American Seed Co., through Mr. A. B. Conner. Received January 20, 1911.

Honey (?). "This seed was being sold under the name of *Red Texas Seeded Ribbon Cane*, but appears to be identical with *Honey* sorgo." (*Conner.*)

29391. PHOENIX DACTYLIFERA L. **Date.**

From Tunis, North Africa. Purchased from Mr. Martel, Deggache, Tunis, through Mr. T. H. Kearney. Received January 21 and 28, 1911.

Menakher. "A large date of good quality and excellent flavor, known only from the Jerid Oases in Tunis, where it has become extremely rare. This variety was formerly the date preferred by the beys of Tunis, and it is stated by the natives of the Jerid that owing to the fact that the agents of the beys were accustomed to confiscate the crop without paying the owners for it, the proprietors of date gardens ceased

29391—Continued.

planting offshoots of the Menakher variety. Fruit purchased in order to obtain seed for planting in the Southwest with the expectation that a considerable percentage will come true to seed or at least produce fruit of superior quality." (*Kearney.*)

29392 to 29405.

From Addis Abeba, Abyssinia. Presented by Mr. Guy R. Love, American vice consul general. Received January 7, 1911.

Seeds of the following; notes by Mr. Love:

29392 to 29403. TRIFOLIUM spp. **Clover.**

29392. "Purple flowered, similar to No. 29393, but while growing the marking of the leaves appears different."

29393. "Purple flowered, similar to No. 29392, but while growing the marking of the leaves appears different."

29394. "Purple flowers, few petals."

29395. "Purple flowers; large loose heads."

29396. "Purple flowers; long thin leaves."

29397. "White flowers; large heads."

29398. "Light-purple flowers; leaves in clusters."

29399. "White flowers; few petals."

29400. "Purple flowers; few petals; thin leaves."

29401. "Purple flowers; grows very close to the ground."

29402. "Dull-purple flowers; appearance of fur on plant and flowers."

29403. "Purple flowers; long heads; thin leaves.

29404. MEDICAGO HISPIDA DENTICULATA (Willd.) Urban. **Bur clover.**

"Small, yellow flowers."

29405. GENISTA (?).

"Yellow flowered."

29407. SORINDEIA MADAGASCARIENSIS DC. **Grape-mango.**

From the island of Mauritius. Presented by Mr. G. Regnard, Port Louis, Mauritius. Received January 23, 1911.

"A tall anacardiaceous shrub which bears panicles of purple flowers, and fruits of a pleasant, sweet-sour, mango taste. These drupes grow in a remarkable and interesting way, not only from the branches, but chiefly from the main trunk of the tree, looking as if they were air roots, with fruit upon them, or like parasites." (*Regnard.*)

Distribution.—Madagascar, Zanzibar, and eastern tropical Africa; cultivated in tropical Asia.

29408. CISSUS CAPENSIS (Burm.) Willd.

From San Gabriel, Cal. Presented by Mr. William Hertrich, superintendent for Mr. H. E. Huntington, Los Robles Ranch. Received at the Plant Introduction Garden, Chico, Cal., January 11, 1911. Numbered January 23, 1911.

"This plant is an evergreen, fast-growing, broad-leaved vine. In my opinion it is the best climbing plant for this part of the country, as far as foliage is concerned." (*Hertrich.*)

Cuttings.

Distribution.—In mountainous ravines on the eastern side of Table Mountain and in the Uitenhage region of Cape Colony.

29409 and 29410. ANNONA SQUAMOSA L. **Custard-apple.**

From Paget Island, Bermuda. Procured by Mr. G. P. Wilder, Honolulu, Hawaii, from Miss Godet. Received January 24, 1911.

29409. Cuttings. **29410.** Seeds.

29411 and 29412. GOSSYPIUM HERBACEUM L. **Cotton.**

From Mesopotamia, Turkey. Presented by Mr. J. S. Levack, American vice and deputy consul, Bagdad, Turkey. Received January 16, 1911.

Seeds of the following:

29411. "*Luka.*" **29412.** "*Iraki.*"

"The foregoing are the varieties of native cotton grown in Mesopotamia. They are cultivated to a very small extent and according to primitive methods. The varieties mentioned are considered to be a very inferior staple.

"In the opinion of experts (such as Sir William Willcocks, in charge of the irrigation works in Mesopotamia), this district will be one of the great cotton-producing areas of the world when the irrigation scheme is complete." (*Levack.*)

29413. BAUHINIA sp.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received January 23, 1911.

"A shrub 10 to 15 feet tall, with horizontal branches covered with pink flowers. The prettiest of the genus." (*Regnard.*)

NOTE.—This appears from the seeds to be the same as No. 26561, which was identified as *B. monandra* Kurz (?). (*Skeels.*)

29414 to 29417.

From Harput, Mamuret-ül-Aziz, Turkey. Presented by Mr. W. W. Masterson, American consul. Received January 12 and 16, 1911.

Seeds of the following:

29414 and 29415. ELAEAGNUS ANGUSTIFOLIA L. **Oleaster.**

29414. Small fruited. **29415.** Large fruited.

29416 and 29417. AMYGDALUS COMMUNIS L. **Almond.**

29416. Sweet. **29417.** Bitter.

"These almond trees seem to be possessed of a wonderfully hardy nature, as they flourish equally well in the low bottom land of the Euphrates River where the climate is very moderate or up in the mountain table-lands, where I have seen them growing at an altitude of 6,000 feet and where the thermometer registers below zero Fahrenheit for several weeks at a time.

"I can not say, however, concerning these almonds or the oleaster bushes, whether they will thrive in a locality where there is much rainfall in the summer or not, as in this country there is practically no rainfall from the middle of May until the first of November and irrigation is resorted to entirely. It seems to me that all of these varieties of seed would grow and mature in any part of our country south of the Potomac and Ohio rivers, particularly in the mountain sections of northern Georgia and Alabama, eastern Tennessee, western North Carolina, and southwestern Virginia, as that entire section of the country is almost identical in climate, soil, and rainfall with the highlands of Asia Minor." (*Masterson.*)

29418. CUCUMIS MELO L. **Muskmelon.**

From Port Said, Egypt. Presented by Mr. Michael A. Borg, United States Engineer Band, Washington, D. C. Received January 24, 1911.

"Local name of this melon is *Shammam*. It is a long type, sweeter than *Netted Gem*, with flesh that peels away from the skin. It is a summer melon planted in Port Said in March." (*Borg.*)

29419 to 29423.

From Rio de Janeiro, Brazil. Presented by Mr. Antonio Augusto Pereira da Fonseca. Received January 23, 1911.

Seeds of the following:

29419. ACANTHORHIZA WARCZEVITZII Wendl. **Palm.**

Distribution.—Apparently native of Central America.

29420. COCOS ODORATA Rodr. **Palm.**

Distribution.—A palm native on the plains in the Province of Rio Grande do Sul, southern Brazil; cultivated at Rio de Janeiro.

29421. JESSENIA AMAZONUM Drude (?). **Palm.**

Distribution.—The eastern equatorial region of Brazil.

29422. CARYOTA SPECIOSA Hort. **Palm.**

29423. (Undetermined.)

"*Pitambo.* A fruit very agreeable and aromatic." (*Fonseca.*)

29424. RAVENALA MADAGASCARIENSIS Sonnerat. **Traveler's tree.**

From Palm Beach, Fla. Presented by Mr. J. B. Donnelly, Palm Beach Hotel. Received January 24, 1911.

The so-called traveler's tree is one of the most conspicuous semitropical plants. It grows to a height of 20 to 30 feet and is a near relative of the banana, resembling that plant somewhat in its leaves. It has a palmlike trunk with large leaves, crowded in two ranks so that the head has the form of a gigantic fan; suitable for planting in semitropical sections.

29425 and 29426. ARISTIDA PENNATA Trin.

From central Asia. Presented by Prof. A. Fischer von Waldheim, director, Imperial Botanic Garden, St. Petersburg, Russia. Received January 23, 1911.

Seeds of the following:

29425. Variety *karelini*. Grown in the sand near the railroad station at Farab. See No. 9582 for previous introduction.

29426. Variety *minor*. From Transcaspian Turkestan; grown on the sand dunes near the Repetek station of the central Asian railroad.

29427 to 29429. CAMPOMANESIA sp. **Guabiroba.**

From Itapeteninga, Sao Paulo, Brazil. Presented by Mr. Welman Bradford, chief of the commission of wheat-culture experiments. Received January 26, 1911.

Fruits of the following; quoted notes by Mr. Bradford:

29427. "Varietal name unknown."

29428. "Variety *pelluda*. Small fruited."

29429. "Grows wild in open undulating prairies."

29427 to 29429—Continued.

"The Guabiroba is very common and hardy, and in spite of the numerous fires bears abundantly. The bloom appears in October or November, and in a month the fruit is ripe. This has a slightly turpentine taste which is not unpleasant. The small varieties are especially agreeable."

29430 to 29450.

From Russia. Presented by Mr. J. A. Rosen, chief, American Agricultural Bureau of the Governmental Zemstvo of Yekaterinoslav, Russia, at Minneapolis, Minn. Received January 20, 1911.

Seeds of the following; quoted native names as given by Mr. Rosen:

29430 to 29436. CHAETOCHLOA ITALICA (L.) Scribn. **Millet**

29430. "*Chu-Miza Paidza.*"

29431. "*Mohar red Grushevka.*"

29432. "*Chu-Miza Khvan-Ianga.*"

29433. "*Chu-Miza Pane,* Manchuria."

29434. "*Grushevka Chu-Miza.*"

29435. "*Kuzo Khunkjancho,* Manchuria."

29436. "*Paigonza,* Manchuria."

29437. CICER ARIETINUM L. **Chick-pea**

"*Knout.*"

29438 and 29439. HELIANTHUS ANNUUS L. **Sunflower.**

29438. Oil. **29439.** Giant.

29440. LATHYRUS SATIVUS L.

"*Chi-Na.*"

29441. LINUM USITATISSIMUM L. **Flax.**

"*Dolgunetz.* For fiber."

29442 to 29444. PANICUM MILIACEUM L. **Proso.**

29442. "Yellow." **29444.** "Black."

29443. "White."

29445. PHASEOLUS RADIATUS L.

"*Toza Luida,* Manchuria."

29446. PHASEOLUS VULGARIS L. **Bean.**

"*Konjo Khvandra,* Manchuria."

29447. TRITICUM POLONICUM L. **Polish wheat.**

"Assyrian rye."

29448 to 29450. ZEA MAYS L. **Corn.**

29448. "*Khan-Boli.* Manchurian corn; has been grown for three years in the province of Yekaterinoslav."

29449. "*Pi-Boli.* Manchurian corn; has been grown for three years in the province of Yekaterinoslav."

29450. "*Grushevka.* One of the best-yielding corns in the province of Yekaterinoslav."

29451 to 29453. (Undetermined.) **Bamboo.**

From the vicinity of the city of David, Panama, at an altitude of 200 feet. Presented by Mr. Luis Alfaro, Subsecretario de Fomento, Panama. Received January 27, 1911.

"Plants of three varieties of unidentified bamboos indigenous to Chiriqui Province, Republic of Panama, according to information from the governor of the province of Chiriqui, who likewise informs us that the grass mentioned grows in all the hot regions of this province at heights which vary from the level of the sea to 300 meters, and at temperatures of 26° to 28° C., but always preferring the low humid spots of the coast.

"In the province of Chiriqui it is generally used in roofs of houses to lay over tiles, in barricades, pasture and farm gates, granaries, etc." (*I. I. Arosemena.*)

29454. DATURA FASTUOSA L.

From Villa Rica, Paraguay. Presented by Mr. C. Mahaux. Received January 20, 1911.

"This plant has mauve flowers from which the people here make cigarettes. It seems that it is a good antiasthmatic." (*Mahaux.*)

Distribution.—Throughout India, tropical Africa, and the Malay Archipelago; cultivated or a weed throughout the Tropics.

29455. MANGIFERA INDICA L. **Mango.**

From Oneco, Fla. Presented by Reasoner Bros., Royal Palm Nurseries, Oneco, Fla. Received at the Subtropical Garden, Miami, Fla., August 15, 1910. Numbered for convenience in recording distribution January 28, 1911.

Langra Benarsi. "Form oblong, oblique; cross section roundish, flattened; size very large; cavity regular, small, very shallow; suture medium wide; beak prominent; surface undulating; color watermelon green with marblings of lighter green; dots small, russet; bloom whitish; skin medium thick, tenacious; flesh yellow, tender, juicy, some fiber but not enough to interfere with spoon; seed flat, oval, cling, large; flavor acid; quality good for culinary purposes." (*W. N. Irwin.*)

29456. ANDROPOGON SCHOENANTHUS L. **Lemon grass.**

From Saigon, Cochin China. Presented by Mr. P. Morange, chief, Service of Agriculture. Received January 28, 1911.

"A plant known only in the cultivated state. It is grown in most tropical countries. The chief points of production are on the Malabar coast and in the Malay Peninsula near Singapore. This grass rarely blossoms and perhaps for this reason has been the subject of some botanical confusion. The herbage on distillation yields the so-called lemon-grass oil of commerce. The substance citral, having a lemonlike odor, is an important constituent of the oil, amounting to about 70 to 75 per cent thereof. The grass as well as the oil has a strong lemonlike taste and odor. This oil, together with citronella oil, distilled from a nearly related plant, is imported into this country in large quantities. They are used chiefly in perfumery products, soaps, and cosmetics and in other materials in which the agreeable odor is desired." (*R. H. True.*)

29457. SOLANUM TUBEROSUM L. **Potato.**

From Canary Islands. Presented by Messrs. Wildpret Bros., Puerto de Orotava, Teneriffe, Canary Islands. Received January 28, 1911.

"A red Irish potato, said to be grown as a summer crop on sandy land in the Canary Islands and to yield heavily." (*S. C. Hood.*)

29458 and 29459. CUCUMIS MELO L. **Muskmelon.**

From the Maltese Islands. Presented by Mr. James Oliver Laing, American consul, Malta. Received January 26, 1911.

Seeds of the following; quoted notes by Mr. Laing:

29458. "Seeds from one dark melon (winter), grown in the island of Gozo, one of this group. This particular melon is the finest specimen of the fruit I have seen here."

29459. "Seeds from several yellow melons (summer)."

"There are two varieties of the Malta melon: The winter or green variety and the summer or yellow kind. The winter type has a dark-green rind, more or less netted, but sometimes almost smooth. The average Malta melon, whether green or yellow, is much less netted than the average Rocky Ford melon in the United States. The winter variety is more oval than the summer variety. Both have a large circular crown at the place of the insertion of the flower. The pulp of the winter melon is white or cream colored; that of the summer melon ranges through various tints of pinkish orange. The pulp of both varieties has a delicate flavor, but not as rich and full as that of a good American muskmelon.

"The rind of both kinds is no thicker than that of an American muskmelon, but is much tougher and more resilient. A blow that would crush the rind of an American muskmelon would leave a Malta melon uninjured. This makes them an excellent shipping variety.

"Winter fruit selected and stored by experts is frequently eaten in January, having been plucked in the first weeks of September. This is exceptional, but fruit which has been kept a month or six weeks is served at the best hotels in Malta.

"The seeds of the summer variety are planted in March and the fruit matures in August. Those of the winter variety are planted in April and mature in September. At the end of the third week after germination the number of seedlings in each hole is reduced to one or two. When the fourth leaf has developed the point of the plant is nipped off. No instrument is used, as the point is tender and is simply pinched off between the thumb and finger. This has the effect of causing the plant to throw out lateral shoots. From the time of pinching off the points until the fruit is as large as an egg the plants are dusted two or three times with flowers of sulphur to prevent mildew.

"The fruit is formed on the lateral shoots caused by pinching off the point. The plant is not raised on a support, but trails along the ground. If the sun is particularly hot the fruit is protected by drawing leaves and branches over it and weighting it down with a stone. This is done especially with the winter or green melons. During the entire growing period the ground is kept free from weeds. The melons are seldom watered artificially except when they are grown on shallow or bad soil. Most of the rainfall of the year is in February. Comparatively little rain falls between the dates of planting and picking. Each plant is allowed to nourish not more than two melons. After gathering the crop the melons are stored in well-ventilated places and should not touch each other.

"Melons are grown in all kinds of soil here. Although Malta is only 17 miles long, there are several distinct kinds of soil. They all, however, contain a large proportion of carbonate of lime. In some cases this ranges as high as 90 per cent. The soil in this case is only broken particles of rock. Melons grow in all these varieties of soil. One reason, perhaps, is the presence of phosphates and alkalies owing to the close proximity of the underlying rock. There is little rain in Malta, but what there is, is conserved admirably in a stratum of blue clay, which is almost impervious to water." (*Laing.*)

29460. CITRUS sp. **Mandarin.**

From Algiers, Algeria. Presented by Dr. L. Trabut. Received January 30, 1911.

"Mandarin of Canton. Hybrid of *Citrus nobilis*. Fruit bright colored; very sweet, ripens in January in Algiers." (*Trabut.*)

29461. ASPARAGUS sp. **Asparagus.**

From New York, N. Y. Purchased from J. M. Thorburn & Co. Received January 26, 1911.

Variety *scandens deflexus*.

Procured for the work of the Office of Truck-Crop Diseases in breeding a resistant asparagus and also various forms for florists' use.

29462. ASPARAGUS STIPULARIS Forsk. **Asparagus.**

From Tunis, North Africa. Presented by Mr. L. Guillochon, director, Jardin d'Essais de Tunis. Received January 28, 1911.

See No. 27163 for previous introduction.

Procured for the same breeding experiments as No. 29461.

29464 to 29470.

From Mexico. Presented by Dr. John Gifford, Cocoanut Grove, Fla., through Mr. Peter Bisset. Received January, 1911.

Seeds of the following; quoted notes by Dr. Gifford:

29464. BUNCHOSIA BIOCELLATA Schlecht.

"*Nanchi.*"

Distribution.—The vicinity of Orizaba in southern Mexico.

29465. CRESCENTIA ALATA H. B. K. **Calabash tree.**

"This tree can be grown outdoors in extreme southern Florida and southern California. The outer skin of the fruit is removed and the seeds and pulp from within, and the hard woody shell is used for water gourds and for all sorts of domestic vessels, according to size and shape." (*Extract from Bailey's Cyclopedia American Horticulture.*)

Distribution.—Along the western coast of Mexico from Mazatlan to Acapulco and in Panama; introduced into the Philippine Islands.

29466. ICHTHYOMETHIA PISCIPULA (L.) Hitchcock.

Distribution.—Florida and Texas, and southward through Mexico and Central America to the vicinity of Guayaquil, Ecuador.

20467. PIPER NIGRUM L. **Pepper.**

See Nos. 5167 and 15681 for previous introductions.

29468. (Undetermined.) (Mimosaceæ.)

"A beautiful flowering leguminous tree."

29469. (Undetermined.) (Fabaceæ.)

"An ornamental shrub having racemes of golden-yellow papilionaceous flowers."

29470. (Undetermined.)

"An orange-colored fruit ½ by 2 inches."

29471. NICOTIANA TABACUM L. **Tobacco.**

From Huatusco, Vera Cruz, Mexico. Presented by Dr. C. A. Purpus, Zacuapam, Huatusco, Vera Cruz, Mexico. Received January 28, 1911.

See No. 29091 for purpose for which introduced.

29475 and 29476. PISTACIA spp.

From Aintab, central Asiatic Turkey. Received through Mr. H. H. Bakkalian, secretary to Mrs. F. A Shepard, January 23, 1911.

Seeds of the following; notes by Mr. Bakkalian:

29475. PISTACIA VERA L. **Pistache.**

"The common pistache exported from Turkey to America."

29476. PISTACIA TEREBINTHUS L. **Terebinth.**

"*Melengish.* This is used as a stock. The fruits are white when unripe and become gradually red. The small tree looks quite showy when covered with these red clusters; the bright red becomes darker and darker as the fruit grows riper. Some time after it is picked it takes the green color, which can be seen on the seeds shipped."

29477 to 29481. **Tobacco.**

From the Municipality of Rayones, Nuevo Leon, Mexico. Presented by Mr. Lauro Liadas, Director General of Agriculture, Mexico, who procured them from the Governor of the State of Nuevo Leon. Received January 31, 1911.

Seeds of the following:

29477 and 29478. NICOTIANA TABACUM L. **Tobacco.**

29477. *Virginia.* **29478.** *Criollo.*

29479 to 29481. NICOTIANA TRIGONOPHYLLA Dunal. **Wild tobacco.**

29479. *Cimarron.* **29481.** *Tabaquillo.*

29480. *Tabaco del Monte.*

29482 and 29483. COLOCASIA sp.

From Canton, China. Presented by Mr. G. Weidman Groff, Canton Christian College. Received December 20, 1910.

Tubers of the following:

29482. "*Paak fu* (white). This variety has white flesh and grows to a height of about 2 feet. It is planted in January, and matures very early, which is worthy of note from the viewpoint of growing it in America. It is usually harvested in June and July. The shape of the tuber is round instead of egg shaped. This variety is probably more productive than the *Hung nga fu.*" (*Groff.*)

"The entire petiole is light green in color." (*R. A. Young.*)

29483. "*Hung nga fu* (redbud). This is so called because the inside flesh shows signs of red. In very fertile soil it should reach a height of about 4 feet, and the taller the plant the better is the result, as the Chinese state it. This variety is good for food, being especially soft when cooked. It is planted in January and harvested as early as August. It is not nearly so productive as the *Bun leung fu,* yielding a crop perhaps a little more than half as large." (*Groff.*)

"The basal portion of the petiole is mottled with maroon. The margins of young leaves are also maroon." (*R. A. Young.*)

29484. CYPERUS PAPYRUS L. **Papyrus.**

From Philadelphia, Pa. Presented by Mr. H. A. Dreer. Received February 1, 1911. Secured at the suggestion of Mr. Charles J. Brand for use in his paper-plant investigations.

"This sedge grows in Egypt, Abyssinia, and Asia Minor, growing 5 to 12 feet high. According to Mr. A. Aaronsohn, of Palestine, a specially large form grows in the lakes above the Dead Sea. In the making of the Egyptian papyri or rolls, the stems were split into long, thin bands which were arranged side by side on a hard, smooth surface. Another set of these bands or strips was then placed upon the first at right angles. The whole was then subjected to pressure, after which the sheet was rubbed smooth with ivory or other hard material. These sheets were then glued together at the ends to form rolls of the desired length. Ordinarily the cortex or outer layer of the stems did not go into the making of sheets but was used for making rough cordage.

"It is evident from the above that papyrus was not used to make paper in the modern sense in which the fibers are chemically digested or mechanically reduced to pulp and then formed into sheets from a thin, watery solution." (*Brand.*)

29485. MACHILUS NANMU (Oliv.) Hemsl. **Nanmu.**

From Yachow, West China. Presented by Mr. W. F. Beaman. Received February 3, 1911.

"This is a species of Machilus, a genus closely allied to Laurus, which grows to great size in western China. It is very highly esteemed by the Chinese on account of the great durability of its wood, which has been used for centuries by the Chinese in the construction of coffins. Owing to its scarcity a sufficient number of planks to construct a coffin often costs as much as a hundred dollars. The imperial palaces are said to be finished in this wood, and huge columns were brought at great expense to support the roof of the temple at the Ming tombs, north of Peking. It is worth careful experiments to find whether there are parts of the United States adapted to its culture. It might easily prove an important article of export if it can be propagated readily in this country." (*Walter T. Swingle.*)

See No. 28128 for previous introduction.

29486. DIOSPYROS LOTUS L. **Persimmon.**

From Tientsin, China. Presented by Dr. Yamei Kin. Received February 3, 1911.

"Seed of the seedling persimmon, sold on the market only in the dried-fig form. This wild persimmon is called *hei tsao* or *black tsao*, not a persimmon according to the fruit growers' classification here." (*Kin.*)

29488. VIGNA sp.

From China. Presented by Rev. J. M. W. Farnham, Shanghai, China. Received February 2, 1911.

"Seed of a wild pea found on mountains. The bloom is very fragrant." (*Farnham.*)

Seeds olive brown, mottled with black.

29489. NICOTIANA TABACUM L. **Tobacco.**

From Mexico. Presented by Mr. W. W. Mackie, director, Yaqui Valley Experiment Station, Esperanza, Sonora, Mexico. Received February 4, 1911.

"Native tobacco seed secured from the Yaqui Indians. This tobacco is called *Macuchi* and has been prized by the Mayos and Yaquis for centuries. The Mayos and Yaquis are branches of the same tribe living on rivers of the same names." (*Mackie.*)

29490. PELARGONIUM ODORATISSIMUM (L.) Ait. **Rose geranium.**

From Algeria. Presented by Mr. A. Mermier-Boyer, Chabet el Ameur, Algeria. Received February 4, 1911.

Procured for the experiments of the Office of Drug-Plant Investigations with this plant for the production of oil.

Cuttings.

29491. JACARANDA sp.

From Parana, Argentina. Presented by Dr. A. M. Monsanto. Received February 4, 1911.

"This tree when in full bloom presents one of the most perfect and artistic clusters of lilac flowers the human eye might ever wish to behold. If I may judge, perhaps the most seasonable time for planting these seeds would be in the spring." (*Monsanto.*)

29493 to 29498.

From Usumbwa, Mwansa, German East Africa. Presented by the Usumbwa Co. Received February 4, 1911.

Seeds of the following:

29493 to 29495. CAPSICUM ANNUUM L. **Red pepper.**

29493. Native large red.

29494. Native round yellow.

29495. Native round red.

29496. CROTALARIA SALTIANA Andrews.

See No. 24119 for previous introduction.

29497. PSIDIUM GUAJAVA L. **Guava.**

29498. GOSSYPIUM sp. **Cotton.**

"This is the species found everywhere in the interior and known to be cultivated by the natives for hundreds of years." (*Usumbwa Co.*)

29499. PISTACIA CHINENSIS Bunge. **Pistache.**

From China. Purchased through Mr. J. C. McNally, American consul, and Mr. Edgar Kopp, vice consul, Tsingtau, China, from Mr. Henry Cousens, Weihsien, China. Received at the Plant Introduction Garden, Chico, Cal., January, 1911.

"Introduced because of its great promise as a shade and ornamental tree. It promises to be hardy as far north as Washington, D. C., and its foliage colors up beautifully in autumn." (*David Fairchild.*)

29500 and 29501. TERMINALIA spp.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received February 4, 1911.

Seeds of the following; quoted notes by Dr. W. W. Stockberger:

29500. TERMINALIA ARJUNA (Roxb.) Wight and Arnott. **Arjan.**

"This species exists as a large deciduous tree, common throughout India. The timber is of some value. The bark serves as an Indian drug and has been used as a cardiac stimulant and tonic. From 8 to 16 per cent of tannin occurs

29500 and 29501—Continued.

in the bark, but the tannin content of the fruit is very low as compared with those species furnishing the myrobalans now largely imported into the United States."

Distribution.—Very common in the lower Himalayan regions of the northwestern provinces of India, in the Dekkan and in Ceylon.

29501. TERMINALIA BENTZOE (L.) Pers.

"Synonyms, *Croton bentzoe* L.; *Terminalia angustifolia* Jacq.; and *T. benzoin* L. f. According to Dragendorff, this species, distributed throughout the East Indies, yields an aromatic resin which has a local use in medicine."

Distribution.—The central Malay Islands.

29502. MANGIFERA INDICA L. **Mango.**

From San Antonio de Los Banos, Cuba. Presented by Mr. J. D. Rose, at the request of Mr. C. F. Kinman, horticulturist, Porto Rico Experiment Station, Mayaguez, Porto Rico. Received February 6, 1911.

Manzana.

29503. HAPLOPHYTON CIMICIDUM DC.

From Mexico, Mexico. Presented by J. Labadie Successors. Received February 6, 1911.

"This is a Mexican plant, the decoction of the leaves of which has been used with success for the control of the orange fruit fly, *Trypeta ludens* Loew." (*Mr. F. A. Stockdale, Assistant Director and Government Botanist, Georgetown, British Guiana.*)

Distribution.—From southern Arizona southward through Mexico to Guatemala, and in Cuba.

29504 to 29513. MANGIFERA INDICA L. **Mango.**

From Poona, Bombay, India. Purchased from Mr. William Burns, economic botanist. Received November 17, 1910. Numbered February 7, 1911.

Plants of the following:

29504. *Mullgoa.*
29505. *Borsha of Bhadgaon.*
29506. *Gola Alphonse.*
29507. *Kavasji Patel.*
29508. *Batli.*
29509. *Kala Alphonse.*
29510. *Pairi.*
29511. *Madras Mullgoa.*
29512. *Ratnagiri.*
29513. *Alphonse.*

29514. ANNONA CHERIMOLA Miller. **Cherimoya.**

From Mexico, Mexico. Presented by Mr. G. P. Rixford, San Francisco, Cal., April 8, 1910, to the Plant Introduction Garden, Chico, Cal. Plants numbered for convenience in recording distribution February 7, 1911.

29515. AMYGDALUS COMMUNIS L. **Almond.**

From Nevada City, Cal. Procured from Mrs. George Dulac, Barren Hill Nursery. Received at the Plant Introduction Garden, Chico, Cal., January 31, 1911.

Jordan. See No. 7398 for description.

29517 to 29520.

From Paramaribo, Surinam. Presented by Mr. P. J. S. Cramer, Director of Agriculture. Received February 6, 1911.

29517 to 29520—Continued.

Tubers of the following:

29517. XANTHOSOMA sp. **Yautia.**

Wittie (Wittie-taya). "Tubers of good size, smooth, elongated, and sometimes slender. Single tubers weigh as much as 14 ounces. They are nonacrid, and when baked the flesh is very white and mealy, though quite firm. The flavor is mild." (*R. A. Young.*)

29518. COLOCASIA sp. **Dasheen.**

Sinesie (Sinesie-taya). "Corms and tubers nonacrid. Flesh of tubers very white when cooked, while that of the corm becomes slightly violet colored. Flavor inferior." (*R. A. Young.*)

29519 and 29520. ALOCASIA sp. **Alocasia.**

29519. *Egg* (Eksi-taya). "Corms and tubers nonacrid. Flesh yellow with whitish layer next to skin. When cooked the yellow flesh resembles the yolk of a hard-boiled egg and has also a slightly similar taste. The flavor is considered rather strong by some, but it is well liked by others." (*R. A. Young.*)

29520. *Abo* (Abo-taya). "Corms and tubers nonacrid; flesh yellow. This variety is too coarse in texture and flavor for table use. It can be used for stock food." (*R. A. Young.*)

"The aroids grown here for table use are wet-land crops in so far as they need more moisture in the soil than sweet potatoes and yams. They prefer a sandy loam with a thick layer of humus on the top, while a light shade is beneficial to their growth. On pure sand they do not thrive as well as the sweet potatoes and yams unless the ground is thickly mulched and lightly shaded.

"The aroids are planted in Surinam the whole year through. They are never flooded, for during the greater part of the year sufficient moisture is kept in the soil by the rains, and in the three very dry months (September, October, and November) fresh water for irrigation purposes generally is not available in the cultivated part (the coast lands) of Surinam.

"The *Sinesie* variety can be reaped after five to nine months. As a table vegetable the *Wittie* variety is by far the best. It cooks perfectly white and is very similar to a good potato. The *Egg* is not so good, while the *Sinesie* is regarded as a rather poor table vegetable, becoming soft and slimy when cooked." (*Cramer.*)

29521. SAMUELA CARNEROSANA Trelease.

From Guajardo, about 25 miles west of Saltillo, Mexico. Procured by Mr. Thomas W. Voetter, American consul, Saltillo. Received February 8, 1911.

"I have been informed that the buds or flower stalks of this 'palm' are used for food, being taken just before the flower opens, and cooked in the same manner as young squash. The flowers themselves are also cooked and eaten. The covering of the mature fruits is also eaten, having much the same flavor as the eastern date.

"From the leaves of this same tree is obtained a fiber which forms the bulk of the 'Ixtle' fiber exported from this consular district." (*Voetter.*)

Distribution.—Northeastern Mexico from the Carneros Pass to Catorce and Cardenas.

29523 and 29524. CANNABIS SATIVA L. **Hemp.**

From China. Presented by Mr. E. H. Wilson, Arnold Arboretum, Jamaica Plain, Mass. Received February 8, 1911.

29523 and 29524—Continued.

Seeds of the following, quoted notes by Mr. Wilson:

29523. "*Hoa ma.* This is perhaps the most important fiber-producing plant in western China. It is cultivated extensively as a winter crop on the Chengtu Plain, especially around the cities of Wen Chiang Hsien and Pi Hsien. The fiber is used for making coarse cloth, cordage, etc., and is also largely exported to other parts of China, via Chungking and Ichang."

29524. "*Man ma.* This is cultivated as an autumn crop in the mountains west of Kwanhsien, between 3,000 and 5,000 feet. The fiber is apparently used only locally by the peasants."

29525. NICOTIANA TABACUM L. **Tobacco.**

From Medan, Dutch East Indies. Presented by Mr. J. G. C. Vriens, director, Deli-Proefstation. Received January 28, 1911.

Deli. "This variety is very susceptible to the Granville tobacco-wilt disease." (*Vriens.*)

29526. (Undetermined.) (Orchidaceæ.) **Orchid.**

From Canal Zone, Panama. Collected by Prof. H. Pittier, of the Bureau of Plant Industry. Received February 9, 1911.

Plant.

29527 and 29528. NICOTIANA TABACUM L. **Tobacco.**

From Huimanguilla, Tabasco, Mexico. Presented by Mr. A. G. Weiss. Received February 6, 1911.

Seeds of the following; quoted notes by Mr. Weiss:

29527. "Seed from which this lot was grown was obtained from Valle National, Mexico. The dealer from whom I procured this variety is experimenting with it in order to find a native tobacco which will produce a better wrapper than the local tobacco."

29528. Seed from Huimanguilla section.

29529. (Undetermined.) (Zinziberaceæ.) **White ginger.**

Grown near Tsinan, Shantung, China. Presented by Rev. H. W. Luce, Shantung Christian University, Weihsien, China. Received February 8, 1911.

"This light-colored variety, so far as I can find out, is grown in sandy soil." (*Luce.*)

Introduced for the purpose of trying ginger culture in more northern latitudes of the United States than has heretofore been attempted.

29530. LAWSONIA INERMIS L. **Henna.**

From Culebra, Canal Zone, Panama. Presented by Mr. Alfred D. Dyer. Received February 8, 1911.

See No. 25776 for description.

29531. QUERCUS SUBER L. **Cork oak.**

From the Almoraima cork woods, Spain. Procured by Mr. R. L. Sprague, American consul, Gibraltar, Spain. Received February 10, 1911.

29532. PASSIFLORA sp. **Passion flower.**

From Mollendo, Peru. Presented by Mr. William Morrison, acting consular agent. Received February 11, 1911.

"The owner of the 'tree' from which this seed was procured does not know where he got the original seed, but is inclined to believe that he received it from Tacna." (*Morrison.*)

29533. PASANIA CUSPIDATA (Thunb.) Oersted. **Evergreen-oak.**

From Yokohama, Japan. Purchased from the Yokohama Nursery Co., at the suggestion of Dr. B. T. Galloway. Received February 8, 1911.

"One of the most striking and beautiful hedges of this district (Sagami) is made from this evergreen-oak. At first I thought they were camphor, so striking were the young leaves. The plant readily adapts itself to any kind of training and seems to stand a lot of rough treatment. The imperial railroad is now using it a great deal for hedges. It would be hardy south of Norfolk, Va., and should also do well along the Pacific coast from Chico, Cal., northward." (*Galloway.*)

See No. 17510 for previous introduction.

Distribution.—The provinces of Kiangsu, Kiangsi, and Kwangtung, China, in Formoca and Nansei Islands, and in Japan, Chosen (Korea), and the Korean Islands.

29534. PHYLLOSTACHYS AUREA A. and C. Riviere. **Bamboo.**

Presented by Mr. James Coey, Ardeen, Larne, Ireland. Received May 19, 1910, and forwarded to the Plant Introduction Garden, Chico, Cal. Numbered for convenience in recording distribution February 13, 1911.

See No. 9052 for description.

29535 and 29536. ANDROPOGON spp.

From Heneratgoda, Ceylon. Presented by J. P. William & Bros. Received February 13, 1911.

Plants of the following:

29535. ANDROPOGON SCHOENANTHUS L. **Lemon grass.**

See No. 29456 for previous introduction.

29536. ANDROPOGON NARDUS L. **Citronella grass.**

Distribution.—Throughout tropical Asia, Africa, and Australia.

29537 and 29538.

From Wellington Point, near Brisbane, Queensland, Australia. Presented by Mr. James Pink. Received February 13, 1911.

Seeds of the following:

29537. ATALANTIA GLAUCA (Lindl.) Hook. f. **Australian desert lime.**

"This is one of the most interesting of all citrus fruits and one which curiously enough, has never yet received adequate attention from botanists or horticulturists. It was first mentioned in 1847 by Ludwig Leichhardt, the German explorer, to whom we owe much of our knowledge concerning the interior of the deserts of northeastern Australia. It is a shrub or small tree 12 to 15 feet high, with a trunk 2 to 6 inches in diameter. It has small but thick leathery leaves of gray-green color, and one is struck by the scantiness of the foliage. The flowers are small and the fruits about a half inch in diameter. An agreeable beverage is made from the acid juice and a fair preserve may be made out of the fruit. The peel has the sweetish flavor of the kumquat. It is known in Australia as the native lemon. The plant was described botanically as *Triphasia glauca* Lindley in a footnote to Lieut. Col. Thomas Livingston Mitchell's 'Journal of an Expedition into the Interior of Tropical Australia in Search of a Route from Sydney to the Gulf of Carpentaria,' London, 1848. This species was based on specimens collected on October 17, 1846, between camps XXXII and XXXIII, near the juncture of the Maranoa and Merevale rivers, in the southern limit of Queensland, latitude 26° S. Decidedly cold weather was encountered near this point, in some cases the ice being so thick that it had to be broken in the morning before the horses could drink. It

29537 and 29538—Continued.

seems quite probable from this that the plant grows in a region where the temperature occasionally falls to 10° F., and in rare cases nearly to zero. It is the hardiest of all evergreen citrus fruits and is very promising for use in breeding new and hardy types. Not only has it highly developed ability to withstand cold, but it is very likely to have the even more desirable quality of being able to withstand occasional spells of hot weather in winter, a quality usually possessed by desert plants. It is not at all improbable that it can be utilized in its present form in many parts of Arizona, as well as in some parts of southern Utah, Nevada, and southern Oregon. It is obviously drought resistant, a point of the greatest interest, both botanically and agriculturally, and its introduction into the United States will undoubtedly lead to the inauguration of a new era in the breeding of citrus fruits." (*W. T. Swingle.*)

Distribution.—In the valleys of the Maranoa, Suttor, and Burdekin Rivers, and Broad Sound and Port Denison in the Province of Queensland, Australia.

29538. PASSIFLORA EDULIS Sims. **Passion flower.**

"This is a great improvement on any we have here. Its history follows: We have two varieties of passion fruit, and working on the Darwinian theory that crossing varieties revitalizes the offspring, I crossed the two varieties two years ago, and the fruit from which these seeds were taken is the result of the cross." (*Pink.*)

29539. DIOSCOREA sp. **Yampie.**

From Gatun, Canal Zone, Panama. Presented by Lieut. Col. William F. Sibert. Received February 9, 1911.

"The pink-fleshed yampie, of Panama, which is considered by the natives as one of the choice tuberous-rooted vegetables. The growing plant resembles in general appearance the ordinary white yams of the Tropics, but it is not of as vigorous growth as these. Some of the tubers will be grown at the Plant Introduction Garden at Brooksville, Fla., for later distribution." (*H. F. Schultz.*)

29540. DIOSCOREA sp. **Yampie.**

From Culebra, Canal Zone, Panama. Presented by Mr. Alfred D. Dyer. Received February 8, 1911.

"This is the pink-skinned yampie, which differs in appearance of both tubers and foliage from the pink-fleshed variety (No. 29539). It is grown quite extensively throughout Central America and forms a very appetizing dish prepared in many ways similar to the ordinary white potato, which it is generally conceded to excel in flavor by Americans and Europeans. The same disposition has been made of these tubers as of the preceding number." (*H. F. Schultz.*)

29629. CITRUS sp. **Orange.**

From Gan Doo Awn, Mawkmai State, Southern Shan States, Burma. Collected by Rev. H. C. Gibbens, M. D., American Baptist Shan Mission, Monghai, Southern Shan States, Burma. Presented by Mr. Oglesby Paul, Fairmount Park, Philadelphia, Pa., through Mr. Edward Simmonds, Subtropical Garden, Miami, Fla. Received February 13, 1911.

"These seeds are from the best variety of orange grown in Burma. The rind comes off very easily and is not adherent to the fruit itself. I have never tasted any American oranges that could approach anywhere near to their flavor. Their natural habitat is a very warm lowland. They will not grow in Monghai." (*Gibbens.*)

29630. ALEURITES FORDII Hemsl. **China wood-oil tree.**

From Audubon Park, New Orleans, La. Presented by Mr. Sam Marshall, superintendent. Received February 3, 1911.

Possibly grown from No. 13104. See this number for description.

Seeds.

29631. BELOU MARMELOS (L.) W. F. Wight. **Bael.**

From Rangoon, Burma. Received through Mr. R. S. Woglum, explorer, Bureau of Entomology, United States Department of Agriculture, February 15, 1911.

See No. 24450 for description.

29632. NICOTIANUM TABACUM L. **Tobacco.**

From Cuernavaca, Mexico. Presented by Sr. Guillermo Gándara, through Mr. W. E. Safford, Bureau of Plant Industry. Received February 14, 1911.

A wild variety.

29633. OPUNTIA FICUS-INDICA (L.) Miller. **Prickly pear.**

From Jerusalem, Palestine. Presented by Mr. E. F. Beaumont, of the American colony. Received February 17, 1911.

"This variety has scarcely any spines, and those existing are only from one-eighth to one-fourth of an inch long and so inoffensive as to be eaten readily by cattle, singeing not being necessary." (*Beaumont.*)

"This is one of the many forms commonly grown in the Mediterranean region of the three continents. It is a rapid grower and spineless enough to be fed to stock without singeing. It will be grown for study, but probably has no advantage over forms we already have." (*David Griffiths.*)

29634 to 29638. VITIS VINIFERA L. **Grape.**

From Besni, in the Deyarbekir Valley, Turkey. Procured by Mr. William W. Masterson, American consul, Harput, Mamuret-ül-Aziz, Turkey. Received February 17 and 18, 1911.

Cuttings of the following:

29634. Black raisin.
29635. White raisin.
29636. Red raisin.
29637. Black wine.
29638. White wine.

See No. 26566 for previous introduction of grapes from this locality.

29639. SACCHARUM OFFICINARUM L. **Sugar cane.**

From Sidzuoka, Japan. Presented by Prof. Y. Kozai, director, Imperial Agricultural Experiment Station, Nishigahara, Tokyo, Japan. Received at the Plant Introduction Garden, Chico, Cal., February, 1911.

See No. 28193 for purpose for which introduced.

Cuttings.

29640. CITRUS sp. **Orange.**

From Villa Encarnación, Paraguay. Presented by Mr. C. F. Mead. Received February 18, 1911.

"*Naranga Imberni*, sometimes called *Naranga sin tiempo*, or in English, 'orange without time or season.' This is distinctive in that the fruit ripens at all times of

29640—Continued.

the year, in some parts early and in other parts late. In this section, Villa Encarnación, the oranges are ripe early in January, whereas the regular orange season here is from May to December, though few good oranges are found after October." (*Mead.*)

29641. CYTISUS MADERENSIS (Webb. and Berth.) Masf.

From the island of Palma. Presented by Dr. George V. Perez, Puerto de Orotava, Teneriffe. Received February 17, 1911.

"A native fodder shrub of great value and at the same time a very ornamental plant. It comes from the same island of Palma as the tagasaste (*Cytisus proliferus* L., No. 28827), and from time immemorial both have been used there for the rearing of cattle and horses.

"I venture to suggest sowing a plat in a suitable climate like California or Florida and keeping the plants for the supply of seed, which is difficult to procure.

"The mistake made about these cytisi when grown for forage is that they are allowed to grow to the size of large bushes or small trees, whereas they ought to be cut back, when they will pollard two or three times in the course of a year.

"They are quite as nutritious as lucern and very drought resistant. In these islands they grow best at an altitude of 2,000 to 4,000 feet, but they will also grow by the coast. It ought to have a great future in California." (*Perez.*)

Seed.

Distribution.—The Canary, Cape Verde, and Madeira islands.

29642. STATICE ARBOREA Broussenet.

From Puerto de Orotava, Teneriffe. Presented by Dr. George V. Perez. Received February 17, 1911.

"This plant has a very vigorous growth. Although it has not been used as a forage plant, the avidity with which goats eat it and the resistance to salt in the soil would make it worth while to make experiments with it.

"The home of this plant was for many years two large maritime rocks entirely surrounded by the sea. From these rocks this plant disappeared, owing to goats having been placed there some 25 years ago to find their food, and it was supposed to be lost to botany until I had it rediscovered by a goatherd in some precipitous rocks on this island in 1906. I beg to refer you to an article in the Annals of Botany, vol. 20, no. 78, Apr., 1906, by Dr. Otto Stapf, of the Herbarium, Kew; also Annals of Botany, vol. 22, no. 85, Jan., 1908, pp. 115 and 116, by the same Dr. Otto Stapf." (*Perez.*)

29649 to 29652. PRUNUS sp. **Plum.**

From Teneriffe, Canary Islands. Presented by Mr. Ross J. Hazeltine, American vice consul. Received February 18, 1911.

Cuttings of the following (quoted notes by Mr. Hazeltine):

29649. "Dark-red plum; red skin and meat."

29650. "Red plum; red skin and yellow meat."

29651. "White plum."

29652. "Yellow plum with red meat."

29653. VITIS VINIFERA L. **Grape.**

From Kiayingchau, China. Presented by Mr. George Campbell. Received February 20, 1911.

"Cuttings of the alleged seedless grape. About a year ago I obtained a very dubious-looking piece of the vine which I cut up and planted. I got one good vigorous plant out of the lot and from it took the cuttings which I am sending you. It

29653—Continued.

has been difficult to find out about this vine. I could not get any of the fruit this year and do not know how valuable it may be. Some say it is seedless and others that it has very few seeds. It has a reputation locally, and for some reason it is hard to get cuttings from it. I am not even sure that my cuttings came from the vine described." (*Campbell.*)

29654. NICOTIANA TABACUM L. **Tobacco.**

From Zacuapam, Huatusco, Vera Cruz, Mexico. Presented by Dr. C. A. Purpus. Received February 15, 1911.

See No. 29091 for purpose for which introduced.

29655. ERYTHRINA CRISTA-GALLI L.

From Cahi Puente, Paraguay. Presented by Mr. C. F. Mead. Received February 18, 1911.

"This plant is called *Ceibo* in Spanish; it may be of some use as an ornamental shrub or small tree. Its usual habit of growth is as a shrub, but by pruning it can be trained into a tree growing to a height of 5 meters. It is a deciduous perennial, flowering every spring, the flowers being large spike clusters 10 to 18 inches long and of a rich dark-red color. It flowers very profusely and to my mind is very beautiful. The branches are very pithy and are used to some extent as a substitute for cork. The roots are also pithy, and it is from them that the 'genuine Paraguay razor hones' are made. It will stand frost equal to tomato vines." (*Mead.*)

29656 and 29657. PASSIFLORA spp. **Passion flower.**

From Mexico. Procured by Mr. Clarence A. Miller, American consul, Tampico, Mexico, from Mr. G. F. Preston, Tamos, Vera Cruz, who obtained them from Dr. F. Foex, director, Estacion Agricola Experimental, Oaxaca. Received February 16, 1911.

Seeds of the following:

29656. PASSIFLORA sp.

29657. PASSIFLORA DICTAMO DC.

"The *Itamo real* is not an edible Passiflora, but in Mexico is valued very highly for its medicinal qualities. Its fruit is small, juicy, of dark-brown, nearly black, color, and full of small seeds. The flowers are small and not very pretty, but the leaves are noted for their sloping form or shape and for the glands with which they are provided." (*Foex.*)

29658 and 29659. QUERCUS SUBER L. **Cork oak.**

From Lisbon, Portugal. Presented by Compañia das Lezirias do Tejo e Sado. Received February 18, 1911.

Seeds of the following:

29658. "*Bastão.* Seeds of the preceding year, developing on the tree throughout a whole year, and generally thought to be more productive."

29659. "*Lande.* Acorns of ordinary production, of this year's fruit, also of very good quality, and of great reproductive value."

29660. ATALANTIA GLAUCA (Lindl.) Hook. f.

Australian desert lime.

From the Condamine River, 12 miles from Chinchilla railroad station, 220 miles from Sunnybank, Australia. Presented by Mr. John Williams, Sunnybank, near Brisbane. Received February 21, 1911.

29660—Continued.

"These trees do not grow in swamps, but on nice, sweet soil near the river and where frosts are sharp. They grow where the orange tree would be frozen in winter." (*Williams.*)

See No. 29537 for previous introduction.

29715 to 29723.

From Canal Zone, Panama. Collected by Mr. William R. Maxon, United States National Museum. Received February 18, 1911.

Plants of the following:

29715 to 29722. (Undetermined.) (Orchidaceæ.) **Orchid.**

(Maxon's Nos. 4720 to 4727.) These were collected on tree trunks in the vicinity of Frijoles, Canal Zone; altitude, 35 to 100 feet.

29723. ELAPHOGLOSSUM HERMINIERI (Bory and Fee) Moore.

(Maxon's No. 4649.) Collected on a fallen tree trunk in the hilly forest around Agua Clara reservoir, near Gatun, Canal Zone; altitude 70 to 100 feet.

29724. (Undetermined.) (Orchidaceæ.) **Epiphytic orchid.**

From near Frijoles, Canal Zone, Panama; altitude 35 to 100 feet. Collected by Prof. H. Pittier, Bureau of Plant Industry. Received February 18, 1911. (Pittier's No. 2683.)

29725 and 29726. MAGNOLIA CAMPBELLII Hook. f. and Thoms.

From Sibpur, Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received February 21, 1911.

Seeds of the following:

29725. From tree bearing red flowers.

29726. From tree bearing white flowers.

29727 and 29728.

From Egypt. Presented by Mr. D. S. Fish, secretary, Alexandria Horticultural Society, Alexandria, Egypt. Received February 20, 1911.

29727. SACCHARUM OFFICINARUM L. **Sugar cane.**

"*Beledi* sugar cane. This has been cultivated in Egypt for centuries. It is highly esteemed by the natives for eating out of hand." (*Fish.*)

Cuttings.

29728. IPOMOEA BATATAS (L.) Poir. **Sweet potato.**

"*Beledi* sweet potato. This was probably brought to Egypt from Spain." (*Fish.*)

Tubers.

29729 and 29730. ROSA spp. **Rose.**

From Lisbon, Portugal. Presented by Mr. Ch. D'Navel, inspector, Botanic Gardens. Received February 21, 1911.

Cuttings of the following hybrids of *Rosa gigantea:*

29729. *Belle Portuguoise.*

29730. *Étoile du Portugal.* A hybrid of *Rosa gigantea* and *Reine Marie Henriette.*

29830. NICOTIANA TABACUM L. **Tobacco.**

From Mexico. Presented by Mr. Thomas W. Voetter, American consul, Saltillo, Mexico. Received February 18, 1911.

"Tobacco of an unknown variety, formerly grown at Congregacion del Rosario, Monclova, about 120 miles northwest of Saltillo. The firm of Damaso Rodriguez, who obtained this seed from their correspondents at Congregacion del Rosario, stated that tobacco had not been grown for sale in the Monclova region for several years, and that the last lot they had purchased was about four or five years ago. This last lot also was not of good quality, as the growers did not know how to cure the leaf." (*Voetter.*)

29831. MELILOTUS INDICA (L.) Allioni. **Melilot.**

From Zafarwal, India. Presented by Mr. H. S. Nesbitt, American Mission. Received February 21, 1911.

"This is the plant called *Sinji* in the Punjab. As far as I have observed, the blossoms are yellow." (*Nesbitt.*)

29832. CARICA PAPAYA L. **Papaya.**

From Monghai, Southern Shan States, Burma. Collected by Rev. H. C. Gibbens, M. D., American Baptist Shan Mission. Presented by Mr. Oglesby Paul, Fairmount Park, Philadelphia, Pa. Received February 23, 1911.

"This fruit grows everywhere in Burma and is very wholesome and pleasant. These seeds were from fairly large and good-tasting fruits raised in Monghai." (*Gibbens.*)

29833. XANTHOSOMA sp.

From Estero, Fla. Presented by The Koreshan Unity. Received February 23, 1911.

"Received under the name *Cuban malanga.* The tubers are of good size, weighing as much as 3 to 4 ounces. When baked the flesh is very white and mealy and of excellent flavor." (*R. A. Young.*)

29834. CANNABIS SATIVA L. **Hemp.**

From Mokanshan, China. Procured from Mr. Robert J. Felgate. Received February 2, 1911.

29835 and 29836. DACTYLIS GLOMERATA L. **Orchard grass.**

From The Plains, Va. Grown by Mr. John McGill, jr., from selections made by Mr. R. A. Oakley on the farm of Mr. E. H. Moore, Lexington, Va. Received February 21, 1911.

Seeds of the following:

29835. (Agros. No. 453.) **29836.** (Agros. No. 454.)

These selections were made for their special forage qualities.

29837. PRUNUS sp. **Plum.**

From Teneriffe, Canary Islands. Presented by Mr. Ross J. Hazeltine, American vice consul. Received February 24, 1911.

NOTE.—Supposed to contain some or all of the varieties listed under Nos. 29649 to 29652.

29839. VITIS sp. **Grape.**

From Mokanshan, China. Presented by Mrs. Annie Andersen, "Ruthville," Mokanshan, via Shanghai, China, at the request of Mr. Alexander Kennedy, Dongsi, China. Received February 23, 1911.

"Seed from wild grapevines I transplanted into my own garden." (*Andersen.*)

29840. COLOCASIA sp. **Dasheen.**

From Hilo, Hawaii. Presented by Mr. F. A. Clowes, superintendent, Hilo and Olaa Substation, Hawaii Agricultural Experiment Station. Received February 27, 1911.

Royal Black or *Lehua Ele-ele.* "The term 'Royal Taro' should, I believe, be applied to a class of taros and not to any one variety. All the dark-fleshed taros were, I am told, taboo to the common people, and were only eaten by and grown for the chiefs. The Lehuas, of which there are two, the Black or Ele-ele and the White or Keo-keo, are only two of this class. I understand that the distinctive mark of the Lehua is the dark-purple ring at the junction of the corm and the leafstalk." (*Clowes.*)

29879. MOMORDICA BALSAMINA L.

From Pretoria, South Africa. Presented by Prof. J. Burtt Davy, Government agrostologist and botanist, Department of Agriculture. Received February 25, 1911.

"Seeds of an ornamental cucurbit. The flowers are inconspicuous, but the tubercled fruit is a beautiful deep orange, the seeds being covered with deep-red, fleshy arillus. It may do in warm parts of the country with a wet summer climate." (*Davy.*)

Distribution.—Throughout tropical Asia, the Malay Archipelago, Australia, and Africa, and cultivated in tropical America.

29880. BROMUS INERMIS Leyss. **Brome-grass.**

From Bellefourche, S. Dak. Grown by Mr. A. C. Dillman, Bureau of Plant Industry. Received February 27, 1911.

"This strain of brome-grass first attracted attention in 1904 at the South Dakota Agricultural Experiment Station, Brookings, S. Dak., where it has been planted in a small plat. It appeared to be extremely vigorous, producing a large quantity of forage and seed. Previous records of the origin of this stock had been lost, but it was listed by Prof. W. A. Wheeler, then botanist of the South Dakota station, as South Dakota No. 26. A part of this seed was planted at the Highmore Substation in 1905, and part of the seed of the 1907 crop was planted at the U. S. Agricultural Experiment Farm, Newell, S. Dak., in 1909, in order to make further selections. This strain is generally characterized by the light color of the panicles. Close study shows that it is not a very uniform type, but it appears to be superior to the ordinary run of commercial seed." (*T. H. Kearney.*)

29881. PINUS PINASTER Soland. 1789. **Pine.**

(*Pinus maritima* Poir. 1804.)

From Naples, Italy. Purchased from Dammann & Co., through Mr. Stuart J. Fuller, vice consul in charge. Received February 27, 1911.

See No. 1736 for previous introduction.

29884 to 29887.

From Japan. Purchased from the Yokohama Nursery Co. Received February 8, 11, and 23, 1911.

29884 to 29887—Continued.

Tubers of the following:

29884 and 29885. DIOSCOREA spp.

29886. SAGITTARIA SAGITTIFOLIA L.

See Nos. 21650 and 21651 for previous introductions.

29887. IPOMOEA BATATAS (L.) Poir. **Sweet potato.**

29888. (Undetermined.) (Orchidaceæ.) **Epiphytic orchid.**

From the forests of Juan Diaz, near Panama, Panama; altitude, 20 to 50 meters. Collected by Prof. H. Pittier, Bureau of Plant Industry. Received February 24, 1911.

Flowers pale yellow. (P. No. 2552.)

29889 to 29905.

From Canal Zone, Panama. Collected by Mr. William R. Maxon, United States National Museum. Received February 24, 1911.

Plants of the following:

29889. ONCIDIUM sp.

Found growing 8 to 15 meters up in a large tree along an old trail above the reservoir, 1 to 3 miles from Gorgona, Canal Zone; altitude, 40 to 150 meters (M. No. 4752.)

29890. EPIDENDRUM sp. (?)

Found growing in a large tree in the same locality as No. 29889. (M. No. 4753.)

29891. (Undetermined.) (Orchidaceæ.) **Orchid.**

Found on a tree trunk on the banks of the Chagres River, below Gatun, Canal Zone, near sea level. (M. No. 4800.)

29892. (Undetermined.) (Orchidaceæ.) **Orchid.**

Found on a tree trunk in the same locality as No. 29891. (M. No. 4801.)

29893. (Undetermined.) (Orchidaceæ.) **Orchid.**

Found on a tree trunk in the forest along the Rio Indio de Gatun, Canal Zone, near sea level. (M. No. 4814.)

29894. (Undetermined.) (Orchidaceæ.) **Orchid.**

Found on a tree trunk in the same locality as No. 29893. (M. No. 4825.)

29895. (Undetermined.) (Orchidaceæ.) **Orchid.**

Found on a tree trunk in the same locality as No. 29893. (M. No. 4828.)

29896. (Undetermined.) (Orchidaceæ.) **Orchid.**

Found on a tree trunk in the same locality as No. 29893. (M. No. 4829.)

29897. (Undetermined.) (Orchidaceæ.) **Orchid.**

Found on a tree trunk in the same locality as No. 29893. (M. No. 4830.)

29898. (Undetermined.) (Orchidaceæ.) **Orchid.**

Found on a tree trunk in the same locality as No. 29893. (M. No. 4831.)

29899. (Undetermined.) (Orchidaceæ.) **Orchid.**

Found on a tree trunk on the banks of the Chagres River, below Gatun, Canal Zone; near sea level. (M. No. 4836.)

29900. (Undetermined.) (Orchidaceæ.) **Orchid.**

Found on a tree trunk in the same locality as No. 29899. (M. No. 4837.)

29889 to 29905—Continued.

29901. Bromelia sp.

Found on a large tree trunk in the same locality as No. 29889. (M. No. 4754.)

29902. Phyllocactus sp.

Found on a tree trunk in the same locality as No. 29893. (M. No. 4832.)

29903. Elaphoglossum sp. **Fern.**

Found on a large tree trunk in the same locality as No. 29893. (M. No. 4833.)

29904. Elaphoglossum herminieri (Bory and Fee) Moore.

Found on a tree trunk in the same locality as No. 29893. (M. No. 4834.)

29905. Nymphaea sp. **Water lily.**

Found in a pond west of the Chagres River, opposite Bohio, Canal Zone; altitude 20 to 40 meters. (M. No. 4779.)

29906. (Undetermined.) (Orchidaceæ.) **Orchid.**

From Mandingo Valley, Canal Zone, Panama. Collected by Prof. H. Pittier, Bureau of Plant Industry. Received February 24, 1911.

(P. No. 2716.)

29907. Stizolobium sp.

From Sibpur, Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received February 27, 1911.

This was received under the name *Mucuna capitata.*

29908. Zea mays L. **Corn.**

From Kweichow, West China. Presented by Rev. J. M. W. Farnham, Shanghai, China. Received February 27, 1911.

"This is a small variety, probably suitable for New England. I am not aware that it possesses any special advantage over other varieties." (*Farnham.*)

29910. Gossypium nanking Meyen. **Cotton.**

From Hwai Yuan, China. Presented by Dr. Samuel Cochran, American Presbyterian Mission. Received February 24, 1911.

Procured for breeding purposes.

29911 to 29917. Medicago spp.

From Palestine. Presented by Mr. John E. Dinsmore, American Colony, Jerusalem, Palestine. Received February 14, 1911.

Seeds of the following:

29911. Medicago blancheana Boiss.

From Jerusalem. "(No. 2707.)"

29912. Medicago coronata (L.) Gaertn.

From Jerusalem. "(No. 2636.)"

Distribution.—The countries bordering on the Mediterranean from Spain to Persia, and in northern Africa.

29913. Medicago falcata L. **Siberian alfalfa.**

From Jerusalem. "(No. 806a.)"

29914. Medicago littoralis Rohde.

From Jaffa. "(No. 1382.)"

Distribution.—The countries bordering on the Mediterranean from Spain to Syria, and in northern Africa, the Canary Islands, and Madeira.

29911 to 29917—Continued.

29915. MEDICAGO MARINA L.

From Jaffa. "(No. 3076.)"

Distribution.—Along the northern coast of the Mediterranean from Spain, southwestern France, and Italy, through the Balkan Peninsula, Asia Minor, and Syria, to Palestine; also in northern Africa.

29916. MEDICAGO ROTATA Boiss.

From Jerusalem. "(No. 8701.)"

Distribution.—On hillsides and in cultivated places in the vicinity of Gaza and on the plain of Damascus in Palestine, and Mesopotamia.

29917. MEDICAGO TRUNCATULA BREVIACULEATA Urb.

From Mizpeh (?). "(No. 2964.)"

Distribution.—Spain, southern France, Sardinia, Sicily, and northern Africa.

29918 and 29919.

From Mexico. Presented by Mr. Edward Everest, "La Candelaria," Tlacotalpan, Vera Cruz, Mexico. Received February 28, 1911.

Seeds of the following:

29918. NICOTIANA TABACUM L. Tobacco.

29919 ANNONA sp.

29921. PRUNUS sp. Cherry.

From Tokyo, Japan. Presented by Dr. T. Watase, The Tokyo Plant, Seed, and Implement Co. Received March 1, 1911.

"*Oshima Sakura.* The fastest growing variety of cherry trees, the wood of which is valued for fuel and charcoal." (*Watase.*)

"In Japan, where the charcoal fire is a great feature of the home life, prizes are given by horticultural societies for the most beautifully burning charcoal." (*David Fairchild.*)

29922. PHOENIX DACTYLIFERA L. Date.

From Basra, Arabia. Purchased from The Hills Bros. Co. Received March 1, 1911.

Different varieties to be grown for selection purposes

29923 to 29979.

From Kew, England. Presented by Dr. David Prain, director, Royal Botanical Gardens. Received January 28, 1911.

29923 to 29956. Seeds of herbaceous perennials:

29923. BETA BOURGAEI Coss.

Distribution.—Along the damp sandy coasts in the Province of Cadiz, southern Spain.

29924. BETA TRIGYNA Waldst. and Kit.

See No. 21095 for previous introduction.

Distribution.—Hungary and the Caucasus region in southern Europe, Asia Minor, and in Armenia.

29925. CICER ARIETINUM L. Chick-pea.

29926. CICER PINNATIFIDUM Jaub. and Spach.

29923 to 29979—Continued.

Distribution.—Open and wooded hillsides in Asia Minor and Syria.

29927. CLEMATIS INTEGRIFOLIA X VITICELLA.

29928. ELSHOLTZIA PATRINII (Lepech.) Garcke.

Distribution.—Temperate and tropical Himalayas, where it ascends to an elevation of 11,000 feet, Siberia, Manchuria, China, and Japan; also naturalized in Germany and the Scandinavian Peninsula

29929. PERDICIUM ANANDRIA (L.) R. Br.

Distribution.—Eastern Siberia, China, Manchuria, Chosen (Korea), and Japan.

29930. PERDICIUM NIVEUM (DC.) Skeels.

(*Oreoseris nivea* DC. Prodromus, vol. 7, p. 18, 1838.)
(*Gerbera nivea* Sch.-Bip. Flora, vol. 27, p. 780, 1844.)

The genus Perdicium was established by Linnæus in 1760 (Plantae Africanae Rariores 22, reprinted in Amoenitates Academicae, vol. 6, p. 103, 1764), with a single species, *P. semiflosculare*. The genus Gerberia, usually spelled Gerbera, to which the species given above is referred by most authors, was first published by Linnæus (Corollarium Generum, p. 16) in 1737 and credited to Gronovius. In the Species Plantarum of 1753, however, it was united with Arnica and does not appear to have been again recognized until 1817, when Cassini (Bulletin Société Philomatique, p. 34) reestablished the genus and included in it four of the Linnæan species of Arnica, namely, *A. gerbera*, *A. piloselloides*, *A. coronopifolia*, and *A. crocea*, referring to it also the genus Aphyllocaulon of Lagasca, 1811, which, he says, can not be distinguished. Since the three species, *Perdicium semiflosculare* L., *Arnica gerbera* L., and *Oreoseris nivea* DC., are considered to be congeneric, and since the genus Oreoseris, which is not now considered distinct from the genus under consideration, was not published by De Candolle until 1838, these plants must be known as species of Perdicium, that being the earliest name after the publication of the Species Plantarum in 1753 that has been applied to the group.

Perdicium niveum was apparently first collected by Wallich on the mountains near Gossain-Than, in the province of Nepal, India, and is known to occur on the Himalayas at an altitude of 7,000 to 12,000 feet between Bhutan and Kashmir. This is an ornamental, herbaceous perennial belonging to the sunflower family.

29931. HERNIARIA HIRSUTA L.

Distribution.—From Spain and Italy eastward through southern Europe to the Caucasus region and to Syria.

29932. LALLEMANTIA IBERICA (Bieb.) Fisch. and Meyer.

"This plant, which is now being cultivated in southern Russia for its oil-producing seed, is introduced in order to test its value as an oil crop, the oil being considered one of the highest grade drying oils. As it occurs native in the drier parts of Palestine, it may be of great importance in the semiarid portions of the Southwest." *(S. C. Stuntz.)*

See No. 2826 for previous introduction.

Distribution.—Rugged and rocky localities on the lower and subalpine slopes of the mountains in Asia Minor, Armenia, Persia, and Syria.

29923 to 29979—Continued.

29933. LATHYRUS ANGULATUS L.

Distribution.—Southern Europe, extending from Spain and Portugal through southern France, Italy, and Dalmatia, and in northern Africa; naturalized in Greece and Armenia.

29934. LATHYRUS APHACA L.

Distribution.—Extending from England through western, central, and southern Europe to Persia and Afghanistan, and in northern Africa.

29935. LATHYRUS ARTICULATUS L.

See No. 18149 for previous introduction.

Distribution.—Spain, Portugal, and also reported from Greece.

29936. LATHYRUS CLYMENUM L.

See Nos. 4160, 6974, and 18146 for previous introductions.

Distribution.—The countries of southern Europe, northern Africa, and western Asia bordering on the Mediterranean.

29937. LATHYRUS GMELINI (Fisch.) Fritsch.

Distribution.—Central Europe and Asia, extending from the German Empire eastward through southern Russia and Siberia to northern India.

29938. LATHYRUS MARITIMUS (L.) Bigel. **Beach pea.**

See Nos. 20383 and 22034 for previous introductions.

Distribution.—Seashores of Europe and Asia, and in America from New Jersey and Oregon northward to the Arctic Sea, and along the Great Lakes.

29939. LATHYRUS MONTANUS Bernh.

See Nos. 20641 and 22553 for previous introductions.

Distribution.—Dry woods and open stretches of the lower mountain slopes of Germany and Switzerland.

29940. LATHYRUS NISSOLIA L.

See No. 17773 for previous introduction.

Distribution.—Europe, extending from England southward and eastward to the Caucasus region, and in northern Africa.

29941. LATHYRUS OCHRUS (L.) DC.

See Nos. 6436 and 18148 for previous introductions.

Distribution.—The countries bordering on the Mediterranean from Spain to Syria, and in northern Africa.

29942. LATHYRUS sp.

Distribution.—Central Europe and Asia, extending from Prussia eastward through the Caucasus region and throughout Siberia.

29943. LATHYRUS POLYANTHUS Boiss. and Blanche.

Distribution.—Slopes of the mountains in the vicinity of Beirut, Syria, and in Mesopotamia.

29944. LATHYRUS SETIFOLIUS L.

Distribution.—Southern Europe, extending from southern France through Hungary and Dalmatia to Greece.

29945. LATHYRUS UNDULATUS Boiss.

Distribution.—The vicinity of Constantinople and in the northwestern part of Asia Minor.

29923 to 29979—Continued.

29946. Ononis alopecuroides L.

See No. 6977 for previous introduction.

Distribution.—The countries of southern Europe and northern Africa bordering on the Mediterranean, and in Syria and Palestine.

29947. Ourisia macrophylla Hook.

Distribution.—Common in damp mountainous localities on the northern and middle islands of New Zealand.

29948. Phytolacca acinosa Roxb.

See No. 29133 for previous introduction.

29949. Podophyllum emodi Wall.

See No. 29328 for previous introduction.

29950. Trifolium alpestre L. **Clover.**

See No. 20762 for previous introduction.

Distribution.—Europe and western Asia, extending from Sweden, Denmark, and Spain eastward to the region of the Ural Mountains.

29951. Trifolium badium Schreb. **Clover.**

See No. 14858 for previous introduction.

Distribution.—Slopes of the mountains of southern Europe, rising to an elevation of 5,500 feet, extending from Spain and southern France eastward to Dalmatia.

29952. Trifolium leucanthum Bieb. **Clover.**

Distribution.—The countries along the northern shore of the Mediterranean from Spain through Italy, Dalmatia, and the Balkan Peninsula to Asia Minor.

29953. Trifolium lupinaster L. **Clover.**

See No. 24458 for previous introduction.

29954. Trifolium ochroleucon Huds. **Clover.**

See No. 25387 for previous introduction.

29955. Trifolium pannonicum Jacq. **Clover.**

See No. 28312 for previous introduction.

29956. Trifolium scabrum L. **Clover.**

See No. 27144 for previous introduction.

29957 to 29979. Seeds of trees and shrubs:

29957. Berberis acuminata Franch. **Barberry.**

See No. 22545 for previous introduction.

Distribution.—In woods in the vicinity of Tchen-fong-chan in the province of Yunnan, China.

29958. Berberis parvifolia Sprague. **Barberry.**

29959. Berberis wilsonae Hemsl. **Barberry.**

See No. 25569 for previous introduction.

Distribution.—Scrub-clad mountain sides to an elevation of 6,000 feet, in the western part of Szechwan and in the vicinity of Patung, Province of Hupeh, China.

29923 to 29979—Continued.

29960. CARAGANA ARBORESCENS Lam.

See No. 1344 for previous introduction.

Distribution.—Northeastern Asia; cultivated in the United States as an ornamental shrub.

29961. CARAGANA ARBORESCENS Lam.

Redowskii variety.

29962. CARAGANA AURANTIACA Koehne.

Distribution.—Along banks of streams in the mountains of the northeastern part of Turkestan.

29963 to 29971. Cotoneasters are especially beautiful for covering walls and for training against the house.

29963. COTONEASTER APPLANATA Hort.

29964. COTONEASTER BULLATA Bois.

Distribution.—The Province of Tibet in the Chinese Empire.

29965. COTONEASTER HUMIFUSA Hesse.

29966. COTONEASTER INTEGERRIMA Medic.

See No. 22695 for previous introduction.

Distribution.—Northern and middle Europe, on the mountains in southern Europe, and eastward through northern Asia to the Altai Mountains.

29967. COTONEASTER LUCIDA Schlecht.

Distribution.—The region of the Altai Mountains and Lake Baikal in Siberia.

29968. COTONEASTER MICROPHYLLA GLACIALIS Hook.

Distribution.—Temperate slopes of the Himalayas from Kashmir to Bhutan at an elevation of 9,000 to 14,000 feet.

29969. COTONEASTER MULTIFLORA GRANATENSIS (Boiss.) Wenz.

Distribution.—Slopes of the valleys in the Sierra Nevada Mountains in southern Spain, at an elevation of 5,000 to 6,000 feet.

29970. COTONEASTER RACEMIFLORA (Desf.) Koch.

See No. 28210 for previous introduction.

29971. COTONEASTER SIMONSII Baker.

See No. 28212 for previous introduction.

29972. PYRUS BALANSAE Decaisne.

See No. 27129 for previous introduction.

29973. PYRUS CANESCENS Spach.

Distribution.—Apparently originating under cultivation in France.

29974. PYRUS LONGIPES Coss. and Dur.

See No. 27131 for previous introduction.

29975. RUBUS ADENOPHORUS Rolfe.

29976. RUBUS FLOSCULOSUS Focke.

Distribution.—The province of Hupeh in the Chinese Empire.

29977. RUBUS LASIOSTYLUS Focke.

See No. 21744 for previous introduction.

29923 to 29979—Continued.

29978. RUBUS PARVIFOLIUS L.

Distribution.—The provinces of Chihli, Shengking, and Szechwan in China, and in Chosen (Korea) and Japan.

29979. × SORBUS HOSTII (Jacq.) Heynh.

Considered to be a hybrid between *Sorbus aria* and *S. chamaemespilus*, grown in the Austrian Alps.

29980. PANICUM MUTICUM Forsk. **Para grass.**

From Peradeniya, Ceylon. Procured by Mr. William C. Magelssen, American consul, Colombo, Ceylon, from the Royal Botanic Gardens at Peradeniya. Received March 1, 1911.

See Nos. 24402, 24434, 24646 for previous introductions.

29981 to 29983. ASPARAGUS spp. **Asparagus.**

From Erfurt, Germany. Purchased from Haage & Schmidt. Received March 1, 1911.

Seeds of the following:

29981. ASPARAGUS COMORENSIS Baker.

29982. ASPARAGUS PLUMOSUS Baker.

Variety *blampiedii*.

29983. ASPARAGUS PLUMOSUS Baker.

Variety *robustus*.

Introduced for the work of the Office of Truck-Crop Diseases in breeding a resistant asparagus, and also various forms for florists' use.

29984. HELIANTHUS ANNUUS L. **Sunflower.**

From Mexico. Presented by Dr. Edward Palmer, Durango, Mexico, through Dr. R. H. True. Numbered March 2, 1911.

"Doctor Palmer in 1896 found a rather good-looking sunflower seed in Mexico which has interested me considerably. It is not a large seed, but has a good, plump kernel, and I think will give a fairly good oil yield. The shuck is much thinner than that of the Russian sort, and if it will yield well in this country it might prove valuable. Doctor Palmer tells me that in Mexico where this sort is grown the black shells yield a purplish dye which is esteemed by some." (*True.*)

29985. NICOTIANA SILVESTRIS Speg. and Comes. **Wild tobacco.**

From Tegucigalpa, Honduras. Presented by Dr. R. Fritzgartner. Received January 25, 1911.

See No. 29091 for purpose for which introduced.

29990. (Undetermined.) (Zinziberaceæ.) **Ginger.**

From Tsinan, Shantung, China. Presented by Dr. J. B. Neal. Received March 4, 1911.

"This ginger comes from a region some 50 or 60 miles south of here, and is planted in soil which my cook describes as being half sand and half ordinary earth. It is planted in April and after the rainy season, which comes in July and August, is ready for harvesting, say in September." (*Neal.*)

29991. AMYGDALUS sp. **Chinese flat peach.**

From Tsinan, Shantung, China. Presented by Dr. J. B. Neal. Received March 6, 1911.

Feicheng. "This peach is grown not far from here. It is a cling and, though rather inconvenient for eating, is very large and luscious, coming into market about the middle of September and lasting for a month or more. It is the last peach we get during the season, the peach supply beginning the middle or last of June and continuing through the summer and early autumn, about four months in all." (*Neal.*)

See No. 21989 for previous introduction.

29992 and 29993.

From Jerusalem, Palestine. Presented by Mr. E. F. Beaumont, American Colony. Received February 28, 1911.

Seeds of the following:

29992. ASPARAGUS ACUTIFOLIUS L. **Wild asparagus.**

Introduced for the work of the Office of Truck-Crop Diseases in breeding a resistant asparagus, and also various forms for florists' use.

29993. MEDICAGO SATIVA L. **Alfalfa.**

Damascus.

29994 to 29998.

From Haifa, Palestine. Presented by Mr. A. Aaronsohn, director, Jewish Agricultural Experiment Station. Received March 6, 1911.

29994. PYRUS SYRIACA Boiss. **Wild pear.**

Cuttings.

"Recommended as a stock for pears in arid soils. These cuttings came directly from the forest and grew spontaneously." (*Aaronsohn.*)

Distribution.—The island of Cyprus, Syria, southern Kurdistan, and western Persia.

29995. PYRUS sp.

Cuttings.

29996. PROSOPIS STEPHANIANA (Bieb.) Kunth.

"A low and very deep-rooting shrub. Pods readily eaten by sheep and goats. Crossing with *Prosopis juliflora* might give very interesting results." (*Aaronsohn.*)

Seeds.

Distribution.—The countries at the eastern end of the Mediterranean, extending from the Caucasus region through Asia Minor, Syria, western Persia, and Assyria to Egypt.

29997. NICOTIANA TABACUM L. **Tobacco.**

"A stout variety, broad leaves, and white, or pink flowers. Cultivated especially in central and northern Palestine. The leaves are rather coarse and of poor quality, but the culture of this variety may be of interest for hybridization or systematic purposes." (*Aaronsohn.*)

Seeds.

29998. CITRULLUS VULGARIS Schrad. **Watermelon.**

"*Bizr mactoob.* In Arabic this means 'written seeds.' The illiterate Arabs believe that sentences of the holy Koran are inscribed on the parenchyma of the seeds. This is a variety of curious rather than economic value." (*Aaronsohn.*)

Seeds.

29999. BERBERIS STENOPHYLLA CORALLINA Hort. **Barberry.**

From Ussy, France. Purchased from Pierre Sebire. Received March 6, 1911.

See No. 25574 for previous introduction.

30001 to 30004. CITRUS DECUMANA (L.) Murr. **Pomelo.**

From Bangkok, Siam. Presented by Mr. G. Cornell Tarler, American consul general. Received March 7, 1911.

Cuttings of the following; quoted notes by Mr. Tarler:

30001. "Fruit is white in color and sweet in taste."
30002. "Fruit is white and a little sour."
30003. "Fruit is white and sweet."
30004. "Fruit is red (like our blood orange) and sweet."

"There are three kinds of seedless pomelos in Siam, all presenting the same outward appearance but differing in flavor and inside appearance. Two of the varieties have a sweet taste, one having a white meat and the other red; the third variety has a white meat, but a slightly sour taste. All varieties are more or less round in shape (bell-shaped), having diameters of 4 to 6 inches. The white pomelo is more prolific than the red.

"The trees grow 10 to 15 feet high and begin bearing fruit at the age of four years; they continue bearing for more than a quarter of a century. One tree ordinarily produces about a hundred pomelos a year.

"During the dry season the pomelos yield no seed, but during the rainy season they sometimes contain many seeds.

"Another thing of importance to be remembered in connection with pomelo culture is the fact that the trees like salt water. In case the orchards are not flooded with sea water, it is customary to apply about 2 pounds of salt to each tree." (*Tarler.*)

30005 to 30007.

From Mount Coffee, Liberia. Presented by Mr. Henry O. Stewart, through Mr. G. N. Collins, Bureau of Plant Industry. Received March 7, 1911.

Seeds of the following; quoted notes by Mr. Stewart:

30005. (Undetermined.)

"Gallah name *Zoe*. A large tree growing to a height of 40 feet. Deer eat the seed, and when it is roasted people also eat it."

30006. (Undetermined.)

"Gallah name *Dea*. This tree is used in the making of canoes and planks. The seed is used as food by the people; it is very hard and has to be cooked all day until it begins to break into pieces; then it is taken off and put into plenty of cold water; it is then ready to eat."

30007. (Undetermined.)

"Gallah name *Kory*. This tree is large, growing to a height of 49 feet. It is very hard, but is never used for anything, because it does not grow straight. The seed is good to eat and is also used for making oil."

30009. MEDICAGO FALCATA L. **Siberian alfalfa.**

From Quetta, British India. Purchased through Mr. F. Booth Tucker, Salvation Army, Simla, India. Received March 7, 1911.

30010 and 30011. ASPARAGUS spp. **Asparagus.**

From Naples, Italy. Purchased from Dammann & Co. Received March 6, 1911.

Seeds of the following:

30010. ASPARAGUS PLUMOSUS Baker.

Variety *superbus*.

30010 and 30011—Continued.

30011. ASPARAGUS SPRENGERI Regel.

Introduced for the work of the Office of Truck-Crop Diseases in breeding a resistant asparagus, and also various forms for florists' use.

30012 to 30024.

From Edinburgh, Scotland. Presented by Dr. Isaac Bailey Balfour, Royal Botanic Garden. Received March 6, 1911.

Seeds of the following; procured for experimental tests and special breeding work:

30012 to 30015. ASPARAGUS spp. **Asparagus.**

30012. ASPARAGUS COMORENSIS Baker.

30013. ASPARAGUS MADAGASCARIENSIS Baker.

Distribution.—Known only on the island of Madagascar.

30014. ASPARAGUS ASPARAGOIDES (L.) W. F. Wight.

This South African liliaceous plant, commonly grown in our greenhouses as "smilax," was first given a binomial name by Linnæus in 1753, *Medeola asparagoides*. It was again described by Linnæus's son (Supplementum Plantarum, p. 203, 1781) as *Dracaena medeoloides*, the material coming from Thunberg. In 1794 (Prodromus Plantarum Capensium, p. 66) Thunberg transferred the species to the genus Asparagus, using the name *Asparagus medeoloides*. The correction to *Asparagus asparagoides* was made by Mr. W. F. Wight in the Century Dictionary and Cyclopedia (vol. 12, p. 339, 1909) under the heading "Myrsiphyllum."

Asparagus asparagoides was reported by Thunberg from South Africa without definite locality, and is now known to occur from Namaqualand, the Kalahari region, and Natal, southward to the Cape.

30015. ASPARAGUS SPRENGERI Regel.

30016. AGROPYRON INTERMEDIUM (Host) Beauv.

Distribution.—Southern Europe and western Asia, extending from Spain and southwestern France eastward through Italy and the Balkan Peninsula to the Caucasus region.

30017. GOODIA LOTIFOLIA Salisb.

Distribution.—A tall shrub growing in the states of New South Wales, Victoria, South and West Australia, and in Tasmania.

30018. GOODIA PUBESCENS Sims.

Distribution.—On the mountains in the vicinity of Dandenong, in the State of Victoria, Australia, and throughout the island of Tasmania.

30019. DACTYLIS GLOMERATA L. **Orchard grass.**

Variety *variegata*.

30020. INDIGOFERA ATROPURPUREA Hamilton.

Distribution.—A tall shrub found in the tropical and temperate slopes of the Himalayas to an altitude of 9,000 feet, from Hazara and the Punjab region to Khasi in northern India.

30021. INDIGOFERA AUSTRALIS Willd. **Wild indigo.**

Distribution.—In grassy places and along rivers throughout Australia and in Tasmania.

30022. KENNEDYA BAUMANNI Meissner (?).

30023. MEDICAGO CARSTIENSIS Wulfen.

30024. FESTUCA RUBRA L. **Red fescue.**

30025 and 30026. STRYCHNOS spp.

From Amani, German East Africa. Presented by the director, Biologisch-Landw. Institut. Received March 9, 1911.

Seeds of the following:

30025. STRYCHNOS sp. 30026. STRYCHNOS QUAQUA Gilg.

Distribution.—The vicinity of Quilimane, in the Mozambique district of East Africa.

"Introduced for the work of this office in bringing together all the members of this genus with edible fruits, in the hope of finding some worthy additions to the list of semitropical fruits standing shipment well. One edible species, *Strychnos spinosa*, has fruits as large as a small pomelo, with a shell that requires a hammer to crack it." (*Fairchild.*)

30027. MEDICAGO FALCATA L. **Siberian alfalfa.**

From Svalöf, Sweden. Presented by Dr. N. H. Nilsson, director, Swedish Seed-Breeding Association. Received March 8, 1911.

"This is seed from our real *Medicago falcata*, which grows wild in most parts of our country and is a very good species. Its harvest value is not very great, as it is frequently lying down, but as a pasture plant it is more valuable. It turns vast dry stretches of sandy (but calcareous) ground into excellent pasture fields, where an astonishingly great number of cattle can feed the whole summer. The seed should be prepared in order to make it germinate." (*Nilsson.*)

30030 to 30032. PYRUS spp. **Wild pears.**

From Algeria. Presented by Dr. L. Trabut, Algiers. Received March 3, 1911.

Cuttings of the following; quoted notes by Dr. Trabut:

30030. PYRUS LONGIPES Coss. and Dur.

"A large fruit."

30031. PYRUS GHARBENSIS Trabut.

"This is near to *Pyrus longipes*, but is sufficiently characterized by the form of the leaves and the fruit. This pear grows on the tufas in the region of Lamoriciere, Daya. I called it *gharbensis* from the name of the region which formed part of the ancient kingdom of Gharb (of the west), at the time of Arab domination."

30032. PYRUS sp.

"A Pyrus which I have not yet distinguished, and which occurs in the basins of the high plateaus on the edge of the Great Shott, a location more calcareous and even alkaline. (This Pyrus has been provisionally assigned to *P. gharbensis*, but it is not identical.)"

30033. PYRUS sp. **Wild pear.**

From Algiers, Algeria. Presented by Dr. L. Trabut, Botanic Gardens. Received March 6, 1911.

"Seeds of a pear occurring on the calcareous tuffs in the dry region south of Oran. Stock good for very calcareous soils." (*Trabut.*)

NOTE.—This seed was received under the name *Pyrus gharbensis*.

30034. COFFEA MAURITIANA Lam.

From Reunion Island. Presented by Mr. G. Regnard, Port Louis, Mauritius. Received March 7, 1911.

Distribution.—In the woods on the slopes of the mountains in the islands of Mauritius and Reunion.

30035 to 30039.

From Yachow, China. Presented by Mr. E. T. Shields. Received March 9, 1911.

Seeds of the following:

30035 to 30038. ZEA MAYS L. **Corn.**

30035. White.

30036. Yellow.

30037. Smooth surface pop corn.

30038. Rough surface pop corn.

30039. MACHILUS NANMU (Oliv.) Hemsl. **Nanmu.**

See Nos. 28128 and 29485 for previous introductions.

30040. EUGENIA DOMBEYI (Sprengel) Skeels.

(*Eugenia brasiliensis* Lamarck, Encyclopédie Méthodique Botanique, vol. 3, p. 203, 1789.)

(*Myrtus dombeyi* Sprengel, Systema Vegetabilium, vol. 2, p. 485, 1825.)

The seeds of this Brazilian tree were received under the name *Eugenia brasiliensis* Lamarck, but Aublet (Histoire des Plantes de la Guiane Françoise, vol. 1, p. 511), in 1775 had used for another species the name *Eugenia brasiliana*, based on *Myrtus brasiliana* L. (Species Plantarum, vol. 1, p. 471, 1753.) As it is not allowable to apply the same name to two species in the same genus, the later species must be given another name. This principle was recognized by Sprengel, who, writing of these plants as species of Myrtus, changed the name of Lamarck's *brasiliensis* to *dombeyi*, evidently because Lamarck secured his information on the plant from the observations and specimens of M. Dombey. It now becomes necessary to use this specific name in the genus Eugenia to which the species is generally admitted to belong. *Eugenia dombeyi* grows in the province of Pernambuco, and is cultivated in the vicinity of Rio de Janeiro, Brazil.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received March 10, 1911.

"A very fine shrub, 10 to 15 feet high, with large glazed leaves and white blossoms. Fruit same as the cherry, red, becoming black when full ripe; sweet and soft flesh." (*Regnard.*)

Seeds.

30041. MESEMBRYANTHEMUM FORSKAHLEI Hochst. **Samh.**

From Jerusalem, Palestine. Presented by Mr. John D. Whiting, deputy consul. Received March 9, 1911.

"A bread more nourishing than wheat is prepared from the samh. The seed pods they throw into water and afterwards dry the seeds in the sun, which when ground in a mill they make into a thin bread and cook it in an iron called saj." (*Forskål's Flora Aegyptiaco-Arabica, 1775.*)

"The samh is a small plant which grows wild, the Bedouins say, all over the desert plateau east of Maan, where nothing is cultivated, there being insufficient rain for any grain to grow.

30041—Continued.

"The natives state that in some years the samh is more plentiful than in others, especially when a generous amount of rain falls in the mountain districts in the west, in which case it is likely that the samh districts receive a small share thereof.

"The plants grow close together, with short stems like lentils. The Bedouins pull them up by hand and flail with a stick, which removes the small seed pods. These are then taken to the wells, and holes from the size of a bathtub up are made in the sandy clay soil and filled with water. The seed pods are thrown into these holes in small quantities and stirred by the women with sticks and their bare feet. The action of the water opens the pods; the seeds fall to the bottom while the hulls float. The seeds are then sifted through fine sieves, to take out as much of the grit as possible, and ground into flour. The bread made from this is very black and gritty, the latter being accounted for by the way the seeds are hulled in sandy holes. To improve the bread the natives add a little sugar to the flour or a kind of molasses made from the seeds of the juniper tree (*Juniperus phoenicea*) by boiling and then straining them.

"The plant, as near as I can learn, grows in a clayey, sandy, saline soil, and where very little rain falls; it ripens about the same time as barley, but, contrary to most other plants, the seed pods do not open when ripe. They are affected by dampness but not by heat, which enables the Bedouin to collect them all summer.

"Possibly this plant might thrive in some arid region in the United States, and while it might never be used for human food, examination might show it to have an economic value." (*Extract from the Daily Consular and Trade Reports, Feb. 16, 1911.*)

Distribution.—Sandy shores and desert places in southern Syria and along the Red Sea.

30042 to 30060.

From Chinese Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, March 9, 1911.

Cuttings of the following:

30042. VITIS VINIFERA L. **Grape.**

From Khotan, Chinese Turkestan. "(No. 801, November 25, 1910.) A table variety called *Monake*. Bunches large to very large; berries also large, of greenish-yellow color, often with reddish cheek on the sun-exposed side; they are of a pleasant, fresh-sweet taste, and possess good keeping and shipping qualities, although the berries easily break off their peduncles when becoming dry. They can also be dried and then furnish a large, meaty raisin, but the seeds in these are somewhat too large. To obtain the greatest productivity the vines should be pruned with long wood.

"Grapes in Chinese Turkestan are nearly always grown on arbors and with long wood. The vines are taken down in late autumn after the first frost has occurred, tied loosely together, laid on the earth or in a shallow ditch, and covered with dry soil from 1 to 3 feet thick. In spring they are uncovered, pruned, and tied to the trellises. As temperatures rarely fall below zero, Fahrenheit, in the grape-growing regions, this burying of the vines seems to be done mainly to prevent them from being ruined through the great fluctuations of temperatures that are experienced in central Asia, the direct hot rays of the midday sun often being followed by very cold nights. Grapes are always grown under irrigation in Chinese Turkestan, but the quantity of water given varies considerably with the nature of the soil and with the locality." (*Meyer.*)

30042 to 30060—Continued.

30043. VITIS VINIFERA L. **Grape.**

From Khotan, Chinese Turkestan. "(No. 803, November 25, 1910.) A table grape called *Kishmis*. Bunches small, very compact; berries small, of greenish-white color; stands some alkali in the soil; bears best when pruned with short wood." (*Meyer.*)

30044. VITIS VINIFERA L. **Grape.**

From Khotan, Chinese Turkestan. "(No. 832, November 26, 1910.) A table grape called *Saïbe* or *Ghusaine*. Bunches large, very elongated, with side bunches; berries large, of long shape, often pointed; color, light amber; taste very sweet and aromatic; has good keeping and shipping qualities, but disappears rather quickly from the markets on account of being so much in demand. See note under No. 30042." (*Meyer.*)

30045. VITIS VINIFERA L. **Grape.**

From Karawag, Chinese Turkestan. "(No. 865, December 10, 1910.) A table grape called *At-Barre*. Bunches long; berries of elongated shape, blue-black in color; ripens late in summer; not a keeper; to be pruned with long wood to obtain best results. See remarks under No. 30042." (*Meyer.*)

30046. VITIS VINIFERA L. **Grape.**

From Karawag, Chinese Turkestan. "(No. 866, December 10, 1910.) A table grape called *Ak-uzum*. Bunches medium large, of round form; berries round, greenish white in color; taste fresh, sweet; to be pruned with long wood. See remarks under No. 30042." (*Meyer.*)

30047. VITIS VINIFERA L. **Grape.**

From Shagra-Bazar, Chinese Turkestan. "(No. 867, December 24, 1910.) A table grape called *Kara-uzum*. Bunches medium large, round in shape, berries round, black in color; taste quite sweet; not a keeper; stands a fair amount of alkali in the soil; to be pruned like preceding number." (*Meyer.*)

30048. VITIS VINIFERA L. **Grape.**

From Karawag, Chinese Turkestan. "(No. 868, December 10, 1910.) A table grape called *Ak-saïbe* (in Russian Turkestan called *Akghusaïne*). Bunches very long, with side bunches; berries very long and slightly pointed; color, waxy white; taste very sweet and aromatic. A good keeper when hung in a cool, dry place; to be pruned like preceding numbers." (*Meyer.*)

30049. TAMARIX sp. **Tamarisk.**

From Sullras, Chinese Turkestan. "(No. 869, December 6, 1910.) Found on dry saline places; the shoots when young are covered with spiny bracts which drop off afterwards. This plant seems to thrive in regions where there is moving sand and grows vigorously through a forming sand hill. Some of these tamarisk mounds are 20 or more meters high and consist of a mass of sand in which the tamarisk roots and branches are the framework that holds the whole together; recommended as an ornamental bush and fuel supplier in desert regions." (*Meyer.*)

30050. TAMARIX sp. **Tamarisk.**

From near Karghalik, Chinese Turkestan. "(No. 870, December 13, 1910.) Found in moist, saline places. Produces masses of rosy flowers all through the summer. The amount of alkali these plants are able to withstand is truly remarkable. Often the surface of the soil is coated with a white cake, and yet they thrive. Recommended as an ornamental shrub and a fuel supply in strongly alkaline regions." (*Meyer.*)

30042 to 30060—Continued.

30051. Salix sp. **Willow.**

From Pustan Terek, Chinese Turkestan, 7,000 feet elevation above sea level. "(No. 873, December 29, 1910.) A tall-growing willow with rather slender branches, called *Kok suchet.* The bark on young twigs is of a vivid green, making the tree look in winter as if it still had leaves. The locality where these trees grow is over 6,000 feet in altitude and the soil alkaline; they are therefore recommended for the northwestern regions of the United States to serve as ornamental park and garden trees." (*Meyer.*)

30052. Salix sp. **Willow.**

From Khanaka, Oasis of Sandju, Chinese Turkestan, elevation 6,000 feet above sea level. "(No. 874, December 5, 1910.) A willow which grows to be very old and large when not continually pollarded. Bark of young branches of a mahogany-brown color. Old trees twist curiously and become highly picturesque objects in the landscape. Resistant to alkali, great heat, and drought. Recommended as an ornamental tree in those regions of the United States where the rainfall is light and the summer temperatures high." (*Meyer.*)

30053. Salix sp. **Willow.**

From Yarkand, Chinese Turkestan. "(No. 875, December 18, 1910.) A willow called *Tagh suchet.* A medium-sized tree with long, somewhat drooping branches whose bark is of a beautiful yellowish-green color. Cultivated in gardens as an ornamental tree. Able to stand considerable drought and alkali. Recommended as an ornamental garden tree in desert regions under irrigation." (*Meyer.*)

30054. Populus euphratica Oliver. **Desert poplar.**

From Toplich, Chinese Turkestan. "(No. 879, December 21, 1910.) The desert poplar called *Kabak Tograk.* A remarkable poplar, very frequent on dry, sandy, and alkaline wastes; sometimes found as a solitary specimen, then again in big groves. Leaves are curiously variable, occurring in all sorts of shapes often on one branch. The wood is heavy and saturated with alkali. It is used mainly as a fuel, although buckets, dippers, and troughs are made from it. The tree is sand binding and is recommended for this purpose; also as an ornamental garden and park tree and as a fuel supplier in desert regions." (*Meyer.*)

30055. Populus nigra L. **Black poplar.**

From Khanaka, Oasis of Sandju, Chinese Turkestan. "(No. 881, December 4, 1910.) The black poplar called *Sa-yu terek;* found here and there in tremendous specimens, especially in old burial grounds; not a common tree, however. It is from this species that the so-called Lombardy poplar has originated. It grows to a great age and becomes very spreading; recommended as a stately park tree in the drier regions of the United States." (*Meyer.*)

30056. Populus alba L. **White poplar.**

From Upal, Chinese Turkestan. "(No. 885, December 31, 1910.) The white poplar called *Ak terek;* grown all through Chinese Turkestan as a lumber and fuel supplier; stands considerable drought and alkali. In some burial grounds one finds gigantic specimens, with a circumference of 25 to 30 feet, 5 feet above the ground. This poplar is recommended as a quick-growing shade tree in desert regions under irrigation. The trees can be pollarded and then furnish a number of even-sized poles, which come in very handy for rough building purposes." (*Meyer.*)

30042 to 30060—Continued.

30057. POPULUS ALBA BOLLEANA Lauche. White poplar.

From Upal, Chinese Turkestan. "(No. 886, December 31, 1910.) The pyramidal white poplar called *Suda terek*. Although this poplar is a variety of the ordinary white one, its wood is very much better in quality and is especially in demand for rafters and for board making, as it does not split to any extent. For this reason it is highly appreciated and is the lumber tree par excellence in Chinese Turkestan. One finds it planted everywhere—around gardens, along the roads, along irrigation canals, and often even in big patches, the trees standing only 5 feet or so apart. The trees are singularly free from disease and grow remarkably fast, even on rather alkaline soils. Old trees can be pollarded when a number of straight, even-sized poles are desired. This poplar has in all probability originated in Chinese Turkestan and is thoroughly accustomed to a desert climate. It therefore deserves the greatest consideration as a lumber and ornamental tree, also as a windbreak, in those regions of the United States where the summers are hot, the winters fairly cold, and where everything has to be raised by irrigation." (*Meyer.*)

30058. SALIX sp. Willow.

From near Langru, Chinese Turkestan. "(No. 889, November 28, 1910.) A golden willow, called *Li-la-machon*, cultivated in gardens as an ornamental tree. Bark of the young branches golden yellow, turning into a yellowish green as they get older. It is a medium-sized, low-headed tree of somewhat flat, globular shape; likes slightly moist places, but stands a fair amount of alkali. Recommended as an ornamental park and garden tree in the desert regions of the United States." (*Meyer.*)

30059. CYDONIA OBLONGA Miller. Quince.

From Kashgar, Chinese Turkestan. "(No. 899, Jan. 11, 1911.) This quince is called in Turkestan *Beehà*. A large variety with ribbed fruits, covered with heavy down; a prolific bearer. The fruits stewed with sugar and made into a compote or cooked with rice are favorite foods in both Russian and Chinese Turkestan. The plants stand considerable alkali and drought and are recommended as a fruit tree for the home garden in desert regions." (*Meyer.*)

30060. ULMUS sp. Karagatch elm.

From Khanaka, Oasis of Sandju, Chinese Turkestan. "(No. 902, Dec. 5, 1910.) A variety of elm called *Kara-yagatch* found in an old graveyard. It has graceful, slightly drooping branches. Recommended as an ornamental garden and park tree in semiarid regions and with slight irrigation in desert places." (*Meyer.*)

30061. MEDICAGO CANCELLATA Bieb.

Collected near Sarepta on top of the Jergeni hills, on white, stony, sandy soil effervescing with acid, by Mr. W. Grekow, Tsaritsyn, Saratov, Russia. Presented by Mr. W. von Arapow, Samara, Russia, at the request of Mr. C. S. Scofield. Received February 28, 1911.

Distribution.—Dry sandy slopes of the Caucasus Mountains near the Caspian Sea and on the plains along the Volga River in the vicinity of Sarepta in southeastern Russia.

30062. CRATAEGUS AZAROLUS L.

From Haifa, Palestine. Presented by Mr. Aaron Aaronsohn, director, Jewish Agricultural Experiment Station. Received March 13, 1911.

"Recommended as a stock for pears on dry land." (*Aaronsohn.*)

See No. 26116 for further description.

30063. ELAEAGNUS ANGUSTIFOLIA L. **Oleaster.**

From Fallon, Nev. Grown by Mr. F. B. Headley, superintendent, Truckee-Carson Experiment Farm. Received March 13, 1911.

"This seed was gathered last year from plants received from the Yankton Nursery of South Dakota in 1907.

"This tree is especially well adapted to the conditions of this section. It grows rapidly, makes a dense hedge, and will stand considerable alkali in the soil." (*Headley.*)

30064. VACCINIUM VITIS-IDAEA L. **Cowberry.**

From Bremen, Germany. Presented by Dr. G. Bitter, Botanical Garden. Received March 13, 1911.

Procured for the breeding experiments of Mr. Frederick V. Coville.

30065 and 30066. DIOSPYROS KAKI L. f. **Persimmon.**

From Okitsu, Japan. Presented by Mr. T. Tanakawa, in charge of Government Horticultural Experiment Station. Received at the Plant Introduction Garden, Chico, Cal., March 8, 1911.

Cuttings of the following:

30065. *Fugi.* Astringent variety.

30066. *Fuyu.* Nonastringent variety.

30067. CARICA PAPAYA L. **Papaya.**

From Tahiti, Society Islands. Presented by Mr. North Winship, American consul. Received March 7, 1911.

30068 to 30079.

From Chile. Received through Mr. José D. Husbands, Limavida, Chile, February 23, 1911.

30068 and 30069. TIGRIDIA sp.

"Flowers blue, about 2 inches in diameter, with yellow centers; plant about 4 or 5 inches high; bulbs comestible." (*Husbands.*)

30068. Bulbils. **30069.** Seeds.

30070 and 30071. (Undetermined.)

"Extra fragrant flowers in large bunches, white and different shades of lilac and lavender in the same bunch, edge of leaves ruffled and saw-toothed; a delightful flower; name unknown. Lasts long in bloom and when cut stays fresh in water 18 to 22 days. Wild flowers sold in the markets and flower stands." (*Husbands.*)

30070. Bulbils. **30071.** Seeds.

30072 and 30073. AGAVE sp. (?)

"An extra early bulb. Bears bunches of bright-crimson flowers, also crimson and yellow; these are 2 inches or more long, three to six flowers per stem; plant stem about 10 to 12 inches high; fine." (*Husbands.*)

30072. Bulbils. **30073.** Seeds.

30074 and 30075. CALYDOREA SPECIOSA (Hook.) Herbert.

"A bright navy-blue flower with a golden center, about 2 inches in diameter; plant about 4 inches high when in bloom; extra early; grows in wet or dry

30068 to 30079—Continued.

places in poor soil. It is sparingly found in the highlands but prefers the plains. Bulbs are edible boiled, roasted, or baked." (*Husbands.*)

30074. Bulbils. 30075. Seeds.

30076 and 30077. TIGRIDIA sp.

"The same as No. 30068 except in shade of color. These are lavender and generally have two flowers to each stem. Edible." (*Husbands.*)

30076. Bulbils. 30077. Seeds.

30078 and 30079. (Undetermined.)

"*Pique.* There is a large assortment of this charming flower both in form and distinct color; no two are exactly alike. The bulbs are eaten boiled, roasted, or baked." (*Husbands.*)

30078. Bulbils. 30079. Seeds.

30080. PERSEA AMERICANA Miller. **Avocado.**

From Santa Barbara, Cal. Presented by Mr. George A. White, at the request of Mr. H. F. Schultz. Received at the Plant Introduction Garden, Chico, Cal., March 8, 1911.

"Buds from a seedling avocado tree growing in Santa Barbara." (*White.*)

30081 and 30082.

From the Philippine Islands. Presented by Mr. C. H. Shamel, Seattle, Wash. Received March 11, 1911.

Seeds of the following:

30081. CLITORIA TERNATEA L.

"This is a flowering vine found growing about a yard at Mati, Mindanao. It has the most brilliant blue flower I have ever seen and makes a pretty, ornamental vine." (*Shamel.*)

30082. CARICA PAPAYA L. **Papaya.**

"From a rather small-sized fruit which is said to mature in eight months and which it occurs to me is worth testing as a greenhouse plant, as it produces heavily in a small space." (*Shamel.*)

30083. NICOTIANA TABACUM L. **Tobacco.**

From Sacramento, Coahuila, Mexico. Presented by Mr. Lauro Liadas, Director General of Agriculture, Mexico, Mexico. Received March 14, 1911.

30084. CAPSICUM ANNUUM L. **Red pepper.**

From Bilbao, Spain. Procured by Mr. Harry A. McBride, American vice and deputy consul general, Barcelona, Spain. Received March 13, 1911.

"*Pimiento Morron.*"

30085 to 30089. MANGIFERA INDICA L. **Mango.**

From Lucknow, United Provinces, India. Presented by Mr. H. J. Davies, superintendent, Government Horticultural Gardens, at the request of Rev. N. L. Rockey, Gonda, United Provinces. Received March 13, 1911.

Cuttings of the following:

30085. *Amin.*
30086. *Bombay.*
30087. *Dilpasand.*
30088. *Langra.*
30089. *Safeda.*

30090. ZEA MAYS L. **Corn.**

From Shanghai, China. Presented by Rev. J. M. W. Farnham. Received March 9, 1911.

"*Liuoo.* A white variety." (*Farnham.*)

NOTE.—Some of this corn was contained in the mixture previously received and given No. 22308.

30091. DIOSCOREA sp. **Yampie.**

From Kingston, Jamaica. Presented by Mr. William Harris, superintendent, Public Gardens, Department of Agriculture. Received March 9, 1911.

"Tubers mostly of fair size, but generally rather rough and irregular in form. The flesh is very white and of good flavor when cooked, resembling somewhat the white-fleshed yampie of the Canal Zone (No. 29540)." (*R. A. Young.*)

30092. JUNIPERUS CEDRUS Webb.

From island of Palma. Presented by Dr. George V. Perez, Puerto de Orotava, Teneriffe, through Mr. S. T. Dana, Acting Chief of Silvics, United States Department of Agriculture, Forest Service. Received February 25, 1911.

"Seed of this very rare and nearly extinct tree. It comes from the heights of the neighboring island of Palma, where the few specimens that remain are being destroyed without mercy. I am afraid the seed is very bad, most of it being barren, probably coming from isolated female trees, but I hope that among it there may be some fertile seed. In years to come I hope to have some seed myself from a few young trees in my garden here." (*Perez.*)

30093. INDIGOFERA sp.

From Port Moresby, Papua, British New Guinea. Presented by Mr. J. A. Hamilton, care of the general manager, British New Guinea Development Co. Received March 10, 1911.

"A legume which grows on the edge of swamps and also drier ground. It has well-developed nodules; the only fault seems to be that it is not a fodder plant and could be used only for soiling purposes. Might do for renovating rice land." (*Hamilton.*)

Probably the same as No. 27562.

30094. MEDICAGO SATIVA L. **Alfalfa.**

From Berkeley, Cal. Presented by Prof. E. J. Wickson, director, Agricultural Experiment Station, through Mr. J. M. Westgate. Numbered March 16, 1911.

"This seed was grown from No. 1151, which gave the best results of any of the Turkestan alfalfas included in the original tests. Flowers variegated." (*Westgate.*)

30095 to 30112.

From Palestine. Presented by Mr. Aaron Aaronsohn, director, Jewish Agricultural Experiment Station, Haifa, Palestine. Received February 27, 1911.

Seeds of the following:

30095. HIPPOCREPIS UNISILIQUOSA L.

Distribution.—Countries along the Mediterranean from Spain through Italy, Greece, Asia Minor, and Syria, and in northern Africa.

30096. CIRCINNUS CIRCINATUS (L.) Kuntze.

Distribution.—Same as the preceding.

30097. MEDICAGO ROTATA Boiss.

Distribution.—On hillsides and in cultivated places in the vicinity of Gaza and on the plain of Damascus in Palestine, and in Mesopotamia.

30095 to 30112—Continued.

30098. SCORPIURUS SUBVILLOSA L.

Distribution.—The countries bordering on the Mediterranean in southern Europe, western Asia, and northern Africa.

See Nos. 16889 and 17788 for previous introductions.

30099. SCORPIURUS MURICATA L.

Distribution.—Same as the preceding.

See No. 16887 for previous introduction.

30100. TRIFOLIUM PILULARE Boiss. **Clover.**

See No. 26574 for previous introduction.

30101. TRIFOLIUM SCABRUM L. **Clover.**

See No. 27144 for previous introduction.

30102. TRIFOLIUM SPUMOSUM L. **Clover.**

Distribution.—In grassy places in the Mediterranean region of southern Europe, western Asia, and northern Africa.

See No. 7759 for previous introduction.

30103 and 30104. TRITICUM DICOCCUM DICOCCOIDES (Koern.) Asch. and Graebn. **Wild wheat.**

30103. Black hulled. **30104.** White hulled.

See No. 29026 for previous introduction.

30105. POTERIUM SPINOSUM L.

Distribution.—The islands of Sardinia and Sicily, and from Dalmatia eastward through the Grecian Islands to Syria.

A small spiny undershrub, said to be a very interesting ornamental. (*Extract from Bailey.*)

30106. CORONILLA SCORPIOIDES (L.) Koch.

Distribution.—The countries along the Mediterranean from Spain through Italy, Greece, the Caucasus region, and Asia Minor, to Persia, and in northern Africa.

30107. ASTRAGALUS CALLICHROUS Boiss.

Distribution.—On the plains of Palestine in the vicinity of Gaza.

30108. ASTRAGALUS HAMOSUS L.

Distribution.—Stony locations in the countries bordering on the Mediterranean in southern Europe, western Asia, and northern Africa.

30109. TRIFOLIUM LAPPACEUM L. **Clover.**

Distribution.—Throughout the Mediterranean region of southern Europe, western Asia, and northern Africa, and in the Canary, Azores, and Madeira islands.

See No. 7754 for previous introduction.

30110 and 30111. MEDICAGO CILIARIS (L.) All.

Distribution.—The countries along the Mediterranean in southern Europe, western Asia, and northern Africa.

30112. AEGILOPS OVATA L.

Distribution.—The countries of southern Europe and northern Africa bordering on the Mediterranean, and eastward through Syria and Palestine to Persia.

30114 to 30117.

From Canal Zone, Panama. Collected by Mr. William R. Maxon. Received February 28, 1911.

Plants of the following:

30114. (Undetermined.) (Orchidaceæ.) **Orchid.**

Found on trunks of small trees in forests along the Rio Indio de Gatun, Canal Zone; near sea level. (M. No. 4844.)

30115. VITTARIA sp. **Fern.**

Found on tree trunks and lianes in the same locality as No. 30114. (M. No. 4850.)

30116. EPIDENDRUM sp. (?)

Found on tree trunks and lianes in the same locality as No. 30114. (M. No. 4851.)

30117. (Undetermined) (Orchidaceæ.) **Orchid.**

Found on a tree trunk near Culebra, Canal Zone. (M. No. 4902.)

30118. BICHEA ACUMINATA (Beauv.) W. F. Wight. **Kola nut.**

The genus Cola was published by Schott and Endlicher (Meletemata Botanica, p. 33, 1832) with six species, of which the first is *Cola acuminata*, based on *Sterculia acuminata* Beauv. (Flore d'Oware, p. 41, pl. 24, 1804). But in 1812 the genus Bichea was established by Stokes (Botanical Materia Medica, vol. 2, p. 564) with one species, *B. solitaria*, which is considered to be the same as *Sterculia acuminata* of Beauvois. The generic name Cola must therefore be replaced by Bichea, which has priority by 20 years. The correction of the name of the Kola nut from *Cola acuminata* to *Bichea acuminata* was made by Mr. W. F. Wight in the Century Dictionary and Cyclopedia (vol. 11, 1909, p. 271), under the heading "Cola."

From Mount Coffee, Liberia. Presented by Mr. Henry O. Stewart, through Mr. G. N. Collins, Bureau of Plant Industry. Received March 17, 1911.

See No. 5217 for description.

Distribution.—This is found in the countries along the west coast of Africa from Sierra Leone and Liberia through Guinea to the valley of the Kongo River.

30119. AVENA ABYSSINICA Hochst.

From Algiers, Algeria. Presented by Dr. L. Trabut. Received February 23, 1911.

30120 to 30132.

From the State of Michoacan, Mexico. Presented by Mr. Lauro Liadas, Director General of Agriculture, Mexico City, who procured them from the governor of the State of Michoacan. Received March 15, 1911.

Seeds of the following:

30120. NICOTIANA TABACUM L. **Tobacco.**

Cimarron. From Istlan.

30121. ERYNGIUM sp.

Yerba del Sapo. From La Piedad.

30122 to 30132. NICOTIANA TABACUM L. **Tobacco.**

30122. *Cimarron.* From La Piedad.

30123. *Mije.* From Etucuara, Acuitzio.

30124. *Cimarron.* From Jiquilpan.

30120 to 30132—Continued.

30125. *Tabaquillo.* From Tacambaro.

30126. *Mije.* From Tacambaro.

30127. *Monte.* From Tacambaro.

30128. *Cimarron.* From Taretan, Uruapan.

30129. *Mije.* From Huetamo.

30130. *Cimarron.* From Tangancicuaro.

30131. *Cayote.* From Tangamandapio.

30132. *Cimarron.* From Tingambato.

30133. MEDICAGO SATIVA L. **Alfalfa.**

From Nemingha, via Tamworth, New South Wales, Australia. Presented by Mr. T. G. Adamson. Received March 16, 1911.

"This lucern has a big, broad leaf and is a vigorous grower." (*Adamson.*)

30137. EUCOMMIA ULMOIDES Oliver. **Tu-chung.**

From China. Procured by Mr. E. H. Wilson and purchased from Prof. C. S. Sargent, Arnold Arboretum, Jamaica Plain, Mass. Received March 17, 1911.

(Wilson No. 383.) See No. 21782 for previous introduction and description.

This tree has proved hardy as far north as Boston, Mass.

30138. VACCINIUM VITIS-IDAEA L. **Cowberry.**

From Christiania, Norway. Presented by Prof. N. Wille, Botanical Gardens. Received March 18, 1911.

Procured for the breeding experiments of Mr. Frederick V. Coville.

30139. DIOSPYROS TESSELLARIA Poir. **Ebony.**

From the island of Mauritius. Presented by Mr. G. Regnard, Port Louis, Mauritius. Received March 20, 1911.

"The true black ebony of Mauritius." (*Regnard.*)

See No. 27494 for previous introduction.

30140. PUERARIA TUBEROSA (Roxb.) DC.

From India. Presented by Maj. A. T. Gage, superintendent, Botanic Gardens, Sibpur, Calcutta, India. Received March 21, 1911.

Distribution.—Tropical slopes of the western Himalayas, ascending to 4,000 feet in Kumaon, and on the hills in the western peninsula of India.

30141 to 30153.

From Chinese Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, March 18, 1911.

Cuttings of the following:

30141. VITIS VINIFERA L. **Grape.**

From Khotan, Chinese Turkestan. "(No. 802, November 25, 1910.) A table variety called *Kizil-uzum.* Bunches of medium size; berries small to medium, of a pale-red transparent color, taste watery sweet. It is a keeper and shipper, but does not excel in anything in particular except in being able to stand considerable alkali in the soil. Of value to grow as a home grape in desert regions under irrigation. To be pruned like No. 30042." (*Meyer.*)

30141 to 30153—Continued.

30142. VITIS VINIFERA L. **Grape.**

From Khotan, Chinese Turkestan. "(No. 833, November 26, 1910.) A table variety called *Yar-bachi*. Bunches large; berries of elongated shape, blue-black color, sweet taste; medium early; not a keeper or shipper. To be pruned with long wood to insure greatest fruitfulness." (*Meyer.*)

30143. FRAXINUS sp. **Ash.**

From Yarkand, Chinese Turkestan. "(No. 871, December 18, 1910.) An ash of peculiar growth found in an old graveyard where it never received any irrigation water. To be tested as an ornamental tree in those regions of the United States where the rainfall is slight and the summer temperatures high." (*Meyer.*)

30144. SALIX sp. **Willow.**

From near Langar, Chinese Turkestan. "(No. 876, November 28, 1910.) A willow called *Khattu suchet*. A peculiar weeping willow, able to grow in rather sandy and in alkaline soils. The weeping properties do not seem to develop in this tree until it has formed a good trunk. The natives often pollard it and the tree then assumes a more regular shape." (*Meyer.*)

30145. SALIX sp. **Willow.**

From Pustan Terek, Chinese Turkestan, elevation 7,000 feet above sea level. "(No. 877, December 29, 1910.) A willow called *Kizil suchet*. Found on moist places in a mountain valley at an elevation of over 6,000 feet above sea level. Mostly seen as a shrub, but when left alone grows into a small-sized tree. Branches very long and slender; bark of a bright, dark-red color. The twigs are remarkably pliable and form excellent tying and basketry material. Recommended as an ornamental and useful shrub for the northern regions of the United States." (*Meyer.*)

30146. SALIX sp. **Willow.**

From near Langrü, Chinese Turkestan. "(No. 878, November 28, 1910.) A willow having a reddish bark and growing into a small-sized tree, found on sandy and alkaline wastes. Of value as a hedge plant and fuel supplier in alkaline and sandy regions." (*Meyer.*)

30147. POPULUS NIGRA ITALICA Duroi. **Lombardy poplar.**

From Bas-lengar, Chinese Turkestan. "(No. 880, December 7, 1910.) Variety *fastigiata*. Called *Tagh terek*. This poplar, which sometimes grows to be very large, is seen everywhere in Chinese Turkestan, even in remote mountain villages. It seems that this fastigiate variety has been developed here independent of other regions. The trees seen were all singularly free from galls or diseases. These cuttings may be tested to find out if they are not a hardier variety. They will do especially well in desert regions under irrigation." (*Meyer.*)

30148. POPULUS sp. **Poplar.**

From Pustan Terek, Chinese Turkestan, elevation 7,000 feet above sea level. "(No. 882, December 28, 1910.) A wild poplar, called by the Kirghiz *Tagh terek*, meaning mountain poplar. Grows in stony wastes where there is underground water within reach. This variety has a particularly white bark on its young branches which makes it present a cheerful aspect in wintertime. Old trees grow a very thick bark, which is deeply and characteristically grooved. They do not make a very spreading head but are apparently built to resist strong winds. See No. 30149." (*Meyer.*)

30141 to 30153—Continued.

30149. POPULUS sp. **Poplar.**

From Pustan Terek, Chinese Turkestan, elevation 7,000 feet above sea level. "(No. 883, December 28, 1910.) A wild poplar, called by the Kirghiz *Tagh terek*. This is the ordinary type of which No. 30148 is a variety. The wood of this tree is very heavy and is used apparently only for fuel. The leaves are quite variable, all forms being found from that of a narrow laurel leaf to a perfect triangular one. Recommended as a hardy ornamental tree for the colder and bleaker sections of the United States. The buds are covered with a fragrant resin. Perhaps it is *Populus laurifolia*." (*Meyer*.)

30150. POPULUS ALBA L. **White poplar.**

From Tash-malak, Chinese Turkestan. "(No. 884, December 25, 1910.) A variety of the white poplar called *Hango terek*. The wood of this tree is burly and often beautifully marked, used to make bowls and basins, also for furniture making, turning, and carving work. The branches of this peculiar poplar show a number of rings, one above the other, as if the twigs had been girdled." (*Meyer*.)

30151. SALIX sp. **Willow.**

From near Duya, Chinese Turkestan. "(No. 888, December 1, 1910.) A very small-leaved willow called *Kerek-suchet* growing on sandy wastes. The wood is quite hard, and the bark assumes a blackish color on old trees. It is sometimes planted as a hedge or windbreak on sandy, wind-swept fields. Recommended for these purposes in those parts of the United States where the rainfall is light, the summers hot, and the winters fairly cold." (*Meyer*.)

30152. ULMUS sp. **Elm.**

From near Kashgar, Chinese Turkestan. "(No. 903, January 1, 1911.) A distinct variety of elm, heads naturally rather flat, spreading, and rounded off. Used as a shade and lumber tree, it being much used in cart manufacture. To be tested as a garden and park tree in semiarid regions and with slight irrigation in desert settlements." (*Meyer*.)

30153. CARAGANA sp.

From Pustan Terek, Chinese Turkestan, elevation 7,000 feet above sea level. "(No. 905, December 29, 1910.) A very low-growing species of Caragana, compact and very spiny, said to be covered with yellow flowers in early summer which are eaten by the Kirghiz. Native name of this plant, *Karagan*. Recommended as an ornamental garden and park shrub in semiarid regions and as a rockery shrub in moist localities." (*Meyer*.)

30154 to 30187. RUBUS spp.

From Vienna, Austria. Presented by Prof. Dr. R. von Wettstein, director, Botanical Gardens. Received March 17, 1911.

This collection of Rubus cuttings includes many of the rarer species of Europe and is introduced for varietal tests and especially for the breeding work of the Office of Crop Physiology and Breeding Investigations.

30154. RUBUS ACHERUNTINUS Tenore.

Distribution.—Along hedges and roadsides in northern Italy and in the Canton of Ticino, Switzerland.

30155. RUBUS MOLUCCANUS L.

Distribution.—From the central and eastern Himalayas in India southeastward throughout the Malay Archipelago.

30156. RUBUS ANTIQUUS Hort.

30154 to 30187—Continued.

30157. Rubus corylifolius Smith.

Distribution.—Western Europe, from England and France southward to central Italy.

30158. Rubus ulmifolius bellidiflorus (Koch) Focke.

Distribution.—Known only under cultivation.

30159. Rubus hirtus bayeri (Focke) Asch. and Graebn.

Distribution.—Slopes of the foothills and valleys of the Alps and Karpathian Mountains in Austria.

30160. Rubus bifrons Vest.

Distribution.—Edges of woods and on hillsides in the vicinity of Minden, Germany, and of Jumet, Belgium.

30161. Rubus caesius L.

30162. × Rubus reticulatus Kerner.

Considered to be a hybrid between *Rubus tomentosus* and *R. hirtus*.

30163. Rubus tomentosus Borckh.

Distribution.—The countries bordering on the northern shore of the Mediterranean from France to Syria.

30164. Rubus clusii Borb.

Distribution.—Known only from Hungary.

30165. Rubus vulgaris Weihe and Nees.

Distribution.—On plains and hillsides in southern Norway, in Denmark, and occasionally in England.

30166. Rubus colemanni Bloxam.

Distribution.—Apparently found in Leicestershire, England.

30167. Rubus deliciosus Torrey.

Distribution.—Canyons in the mountains of Colorado.

30168. Rubus drejeri Jens.

Distribution.—Along hedges and on the borders of woods in Scotland, northern England, and in Denmark.

30169. Rubus fruticosus L.

30170. Rubus foliosus Weihe and Nees.

Distribution.—England, Ireland, France, and southward to the Pyrenees and the Alps.

30171. Rubus grahami Hort.

30172. Rubus jacquini Hort.

30173. Rubus leucostachys Schleicher.

Distribution.—In woods and thickets in Essex, Sussex, Hampshire, and Berkshire, England.

30174. Rubus vulgaris laciniatus (Wills.) Asch. and Graebn.

Distribution.—Known only under cultivation.

30175. Rubus lamprophyllus Gremli.

Distribution.—Alpine slopes in northern and western Switzerland and the adjacent provinces of Germany.

30176. Rubus macrostemon Focke.

Distribution.—England, France, Denmark, and southern Europe eastward to the Caucasus region.

30154 to 30187—Continued.

30177. RUBUS MUCRONATUS Hort.

30178. RUBUS LINEATUS Reinw.

Distribution.—On the slopes of the Himalayas at an elevation of 6,000 to 9,000 feet in the Province of Sikkim in northern India, and on the mountains of the island of Java.

30179. RUBUS PLICATUS Weihe and Nees.

Distribution.—The Scandinavian Peninsula, Denmark, the British Islands, and northwestern France.

30180. RUBUS RHAMNIFOLIUS Weihe and Nees.

Distribution.—Southern Sweden, Denmark, northern England, and Scotland.

30181. RUBUS SQUARROSUS Fritsch.

Distribution.—Described from cultivated plants apparently found in material received from Australia.

30182. RUBUS SPRENGELII Weihe.

Distribution.—England, Ireland, southern Denmark, and the northern part of France.

30183. RUBUS SULCATUS Vest.

Distribution.—From England and the southern part of the Scandinavian Peninsula southward through Denmark and France to central Italy.

30184. RUBUS THYRSANTHUS Focke.

Distribution.—Southern Sweden, Denmark, and the northern provinces of the German Empire.

30185. RUBUS TOMENTOSUS Borckh.

Distribution.—See No. 30163.

30186. RUBUS VESTITUS Weihe and Nees.

Distribution.—England, Ireland, France, and Denmark.

30187. RUBUS SCHMIDELIOIDES A. Cunn.

Distribution.—In the lowland districts of the North and South Islands of New Zealand.

30189 and 30190. AGAVE POTOSINA × SISALANA. **False sisal.**

From Algiers, Algeria. Presented by Dr. L. Trabut. Received March 20, 1911.

"In a crossing of the great agave of San Luis Potosi with sisal I obtained forms very interesting as textiles. The plants producing bulbils, it was very easy to fix the best variations obtained. The hybirds are very much more resistant to cold than the sisal. The fibers are more brilliant, finer, and more abundant. It will be an interesting false sisal." (*Trabut.*)

30189. Bulbils. **30190.** Seeds.

30191 to 30196.

From Yachow, Szechwan, West China. Presented by Dr. Edgar T. Shields. Received February 23, 1911.

Seeds of the following; quoted notes by Dr. Shields:

30191 to 30194. RAPHANUS SATIVUS L. **Radish.**

30191. "Green skinned." **30193.** "Round red."

30192. "Long red." **30194.** "Round white."

30191 to 30196—Continued.

30195. Diospyros kaki L. f. **Persimmon.**

"Excellent fruit."

30196. Actinidia chinensis Planch. **Yang-taw.**

"A large vine bearing most delicious fruits that are hairy on the outside and contain lots of seed."

See No. 21781 for further description.

30197 to 30199. Nicotiana tabacum L. **Tobacco.**

From Cuba. Presented by Mr. E. W. Halstead. El Caimital Fruit Co., Los Palacios, Cuba. Received March 20, 1911.

Seeds of the following:

30197. From Pinar del Rio, Pinar del Rio Province.

30198. From Los Palacios, Pinar del Rio Province.

30199. From Holguin, Santiago de Cuba Province.

30200. Medicago falcata L. **Siberian alfalfa.**

Collected in 1909 from specimens growing wild in lower Austria. Presented by Dr. Weinzirl, director, Imperial Seed-Control Station, Vienna, Austria. Received March 17, 1911.

30201. Citrus sp. **Orange.**

From Rio de Janeiro, Brazil. Presented by Mr. Antonio Augusto Pereira da Fonseca. Received March 23, 1911.

Bahia.

Cuttings.

30206. Samuela carnerosana Trelease.

From Mexico. Procured by Mr. Thomas W. Voetter, American consul, Saltillo, Mexico. Received March 23, 1911.

"The man who collected this seed stated that he sells much of it to local druggists, who grind it and sell it as a purgative. The fleshy covering of the seeds also has a purgative action when freely eaten." (*Voetter.*)

See No. 29521 for further description.

30207. Citrus sp. **Sweet lemon.**

From Tobago Island, British West Indies. Presented by Mr. N. E. Coffey, Ancon Hospital, Ancon, Canal Zone, Panama. Received March 23, 1911.

Cuttings.

30208 to 30210.

From the plains of the island of Marajo, the great cattle country of the State of Para, Brazil. Presented by Mr. Walter Fischer, acting director, Campo de Cultura Experimental Paraense, Para, Brazil. Received March 23, 1911.

Seeds of the following; quoted notes by Mr. Fischer:

30208. Paratheria prostrata Griseb.

"Variety *pubescens*, here known as capim de marreca (duck grass). It is said to differ from the type in being annual; prefers the clay soils of the lowlands, where it is under water for half of the year or more, reproducing itself by seeds at the beginning of the summer, when it makes a fine green pasture not over a foot in height, surviving the long drought in the hard, baked, clay soil."

Distribution.—Not previously known from any place outside of the island of Cuba.

30208 to 30210—Continued.

30209. ERAGROSTIS HYPNOIDES (Lam.) B. S. P.

"This is known as 'barba de bode' (goat's beard). The habitat of this Eragrostis is similar to that of the other grass (S. P. I. No. 30208); it is, however, considered more nutritive and more savory than the latter."

30210. MIMOSA sp. (?)

"'Juquiry,' a legume that is considered both very fattening and sustaining; it is a weed, and for this reason should be watched."

30211 to 30214.

From Piracicaba, Brazil. Presented by Prof. Clinton D. Smith, Escola Agricola Pratica, "Luiz de Queiros." Received March 23, 1911.

Seeds of the following; quoted notes by Prof. Smith:

30211. MANGIFERA INDICA L. **Mango.**

"Seeds from a choice variety grown on the fazenda of Señor Grossi of Arraraquara, in this State. I have never eaten other mangos which approach them in excellence of flavor and absence of the turpentine odor and flavor."

30212. ANACARDIUM OCCIDENTALE L. **Cashew.**

"From the fruit of this they make a delightful drink called 'cajuada.'"

30213. ANNONA SQUAMOSA L. **Custard apple.**

"Seed from the best selected variety I could find."

30214. ANNONA SQUAMOSA L. **Custard apple.**

"'Áta,' a fruit that takes fully a year to mature."

30215. THAUMATOCOCCUS DANIELLI (Bennett) Bentham.

From Aburi, Gold Coast, West Africa. Presented by Mr. A. R. Gould, curator, Botanic Gardens, through Mr. W. T. D. Tudhope, Director of Agriculture. Received March 24, 1911.

"Said to be a very common plant on the Ivory Coast in virgin forests and on the sites of old plantations established in the forests. It is in certain places said to be characteristic of the clearings and underbrush of the forests. The white part of the arillus is extremely sweet, with a taste of licorice or saccharine. The gelatin (or mucilage) which surrounds the seed swells up in water and forms a great mass of gelatin, with the black seed in the middle, which gives it the appearance of frog eggs. The plant has the following native names: Bobo abi (Negau); Bobruidja, Bogridja (Bete d'Issia); Urugua meremne (Bakoura)." (*Extract from the Journal de Botanique.*)

"No use is made of the seeds in this colony, but the leaves are extensively used in packing fresh kola nuts to prevent them from drying." (*Tudhope.*)

Distribution.—The countries along the west coast of Africa from Sierra Leone and Liberia through Guinea to the region around the mouth of the Niger River.

30216. PITTOSPORUM MAYI Hort.

From Castlewellan, County Down, Ireland. Presented by Mr. Thomas J. Ryan, head gardener for Earl Annesley. Received March 24, 1911.

"This variety has proven quite hardy. I have planted about 300 yards of a hedge of it, grown from seed saved from the Castlewellan plants, on an estate near the seacoast; they are now about 4 feet high and make a fine ornamental hedge. The only trouble with all the Pittosporums is transplanting. We find it safest to grow them in pots plunged in the open ground till they are finally placed out; this of course applies only to young stock. The variety *mayi* grows freely and quickly from seed and is a good stock to work other sorts on if necessary." (*Ryan.*)

30217 to 30221. ASPARAGUS spp. **Asparagus.**

From La Mortola, Ventimiglia, Italy. Presented by Prof. Alwin Berger, curator of the garden. Received March 23, 1911.

Seeds of the following:

30217. ASPARAGUS ACUTIFOLIUS L.

30218. ASPARAGUS COOPERI Baker.

Distribution.—On the wooded slope of Mount Boschberg, at an elevation of 2,800 to 4,000 feet, in the Somerset division of the central region of Cape Colony.

30219. ASPARAGUS CRISPUS Lam.

30220. ASPARAGUS OFFICINALIS L.

30221. ASPARAGUS SPRENGERI Rgl.

Introduced for the work of the Office of Truck-Crop Diseases in breeding a resistant asparagus and also various forms for florists' use.

30222 to 30224.

From Paraguay. Presented by Mr. C. F. Mead, Villa Encarnación. Received March 24, 1911.

Seeds of the following; notes by Mr. Mead:

30222 and 30223. LAGENARIA VULGARIS Ser. **Gourd.**

"This maté or small gourd is of the kind used hereabouts in conjunction with a bombilla in making the maté as used here for drinking the Paraguay tea (No. 29097). Plant seeds where there is a trellis for the vines to run on, and do not pick matés until fully ripened."

30224. ASTRONIUM URUNDEUVA (Allemo) Engler. **Urunday.**

"In Guarany this is known as *urundai-mi*. This is a tree very similar to quebracho, but preferable for building purposes, both in strength, durability, and because it is lighter in weight, but this particular variety works harder with tools. Specific gravity 1.172 to .917, tensile strength about 20,000 pounds to the square inch, and crushing strength of 14,000 pounds to the square inch. Its resistance to rot is of the best—in fact, its longevity is unknown, there being bridges in the old line of the Paraguay Central, built in the time of the elder Lopez in the sixties, the piles of which are sound to-day, the part below ground being almost petrified. Whenever a pile has had to be replaced it was because insects had eaten the part above ground, and in repairs the general rule is to excavate to the first splice and simply put a new piece on top. For heavy piling or foundation work when extreme durability and strength is required, bridge work, or, in fact, any heavy framing where freedom from splitting is a factor, I can recommend this wood highly, both from my own experience and that of others who have used it hereabouts for decades.

"Of the urunday, there are three classes: Blanca (white), colorado (red), and negra (black). This seed is of the latter kind, by far the best of the three; it has a grain interwoven, seemingly even at the rings, as it is impossible to split it in any direction, a very desirable attribute, but trying to the nerves of mechanics working same. The name is a misnomer, as the wood is colored like mahogany except that the rings are black, making when cut up a most magnificent wood for veneer purposes, especially for furniture, picture frames, or house finishing. In this class of work it will easily rival rosewood. The urunday is a native of subtropical climates, so it may possibly thrive in parts of the South or Southwestern States. It wants a black soil, rich in humus, and does best in lower levels of hills. It should grow to a height of 15 meters

30222 to 30224—Continued.

and trunk about 12 to 14 inches in 10 to 12 years. It never grows sound to a greater diameter than 20 inches; from that diameter up it is invariably hollow. In these parts this tree is a choice tidbit for bichos, or tree-loving insects, but its hardness would dull the bill of any insect you have except possibly the teredo, and of its resistance to that I have no knowledge."

Distribution.—Tropical woods in the provinces of Minas Geraes and Rio de Janeiro, Brazil, and in the vicinity of Oran in northern Argentina.

30225 to 30227.

From Diamantina, Brazil. Presented by Mr. E. G. Swain. Received March 23, 1911.

Seeds of the following; quoted notes by Mr. Swain:

30225. GARCINIA sp.

"A fruit called *Lemon de Matt*, which means 'Lemon of the woods.' This is a delicious fruit and grows on a fair-sized tree; would do well in the Southern States."

30226. CYDONIA OBLONGA Miller.

"Marmeileiro."

30227. VIGNA SESQUIPEDALIS (L.) W. F. Wight.

"Seed from a pod that was nearly 2 feet long. It is very good eaten green like string beans, or the beans alone when nearly dry."

30228. PHASEOLUS COCCINEUS L.

From San Jose, Costa Rica. Presented by Prof. C. Wercklé, Department of Agriculture. Received March 25, 1911.

"This Phaseolus bears scarlet flowers; it is a perennial species, and the roots, which are much like mandioca, are eaten, but only the first year and when the plant has been growing very quickly in rich soil; but it could be improved." (*Wercklé.*)

30230. POPULUS PRUINOSA Schrenk. **Poplar.**

From Tiflis, Caucasus, Russia. Received from the Botanic Gardens (?), March 27, 1911.

Cuttings.

Distribution.—In the valley of the Ili River in central Asia.

30231 to 30267.

From Albano, Stockholm, Sweden. Presented by Dr. Veit Wittrock, Botanical Gardens. Received March 25, 1911.

Seeds of each of the following:

30231. TSUGA DIVERSIFOLIA (Maxim.) Mast.

Distribution.—Slopes of the mountains in the islands of Japan.

30232. DACTYLIS HISPANICA Roth.

Distribution.—Southern Europe, from Spain eastward through Italy to Croatia and Dalmatia.

See No. 17808 for previous introduction.

30233. PHLEUM MICHELII All.

Distribution.—Southern Europe, from the Austrian Alps through Croatia to Montenegro.

See No. 18486 for previous introduction.

30231 to 30267—Continued.

30234. Berberis cretica L. **Barberry.**

Distribution.—Saloniki, Macedonia, and Greece, and the islands of Crete, Samos, and Cyprus.

30235. Berberis serrata Koehne. **Barberry.**

Distribution.—Apparently known only under cultivation.

30236. Sambucus racemosus L.

See No. 20114 for description.

30237. Beta vulgaris cicla L.

Distribution.—Along the coasts of England and Europe.

30238. Beta trigyna Waldst. and Kit.

30239. Beta vulgaris L.

30240. Beta vulgaris L.

Variety *aurea*.

30241. Spinacea oleracea L. **Spinach.**

30242. Melilotus altissima Thuill.

Distribution.—Europe and western Asia, extending from England, France, Germany, and Spain eastward to the region of the Altai Mountains.

30243. Clematis orientalis L.

Distribution.—Temperate parts of southern Asia from Persia through northern India and China to Manchuria.

30244. Clematis recta mandshurica (Rupr.) Maxim

See No. 22620 for description.

30245. Rhamnus fallax Boiss.

Distribution.—Alpine mountain slopes of southern Europe from Carniola southeastward through Dalmatia, Croatia, and Servia, to Greece.

30246. Rhamnus catharticus L. **Purging buckthorn.**

Distribution.—Europe, western Asia, and northern Africa, extending from Sweden and Norway southward to Spain and eastward to the Altai Mountains.

30247. Rhamnus erythroxylum Pallas.

Distribution.—On exposed rocks and in sandy places in the Trans-Baikalian region of Siberia, in Dahurica, and in Mongolia.

30248. Rhamnus frangula L. **Alder buckthorn.**

Distribution.—Sweden and Norway eastward to the Ural Mountains, and southward to Spain and Asia Minor.

See No. 2179 for description.

30249. Crataegus douglassii Lindl.

See No. 26255 for previous introduction.

30250. Malus medwietzkyana Dieck.

See No. 27123 for previous introduction.

30251. Malus prunifolia (Willd.) Borckh.

See No. 27124 for previous introduction.

30252. Malus ringo Sieb.

See No. 27125 for previous introduction.

30253. Malus sargenti Rehd.

Distribution.—A low shrub found in a brackish marsh in the vicinity of Mororan in the Province of Hokushu, Japan.

30231 to 30267—Continued.

30254. ROSA ALBA L. **Rose.**

Variety *graveolens*.

Distribution.—France and Germany, and northern Italy; naturalized in England.

30255. ROSA BLANDA Ait. **Rose.**

See No. 28235 for previous introduction.

30256. ROSA CINNAMOMEA L. **Rose.**

Distribution.—Throughout Europe from the Scandinavian Peninsula southward to the Alps and eastward to the Caucasus region and Armenia.

30257. ROSA sp. **Rose.**

30258. ROSA RUBIGINOSA IBERICA (Stev.) Boiss. **Rose.**

Distribution.—The Caucasus region of southeastern Russia and in northern Persia.

30259. ROSA JUNDZILLI Besser. **Rose.**

Distribution.—From France eastward through southern Russia to Armenia.

30260. ROSA RUGOSA KAMCHATICA (Vent.) Deyer. **Rose.**

Distribution.—Among the dry rocks in the Kamchatkan Peninsula. Cultivated in Europe since 1791.

30261. ROSA NUTKANA Presl. **Rose.**

Distribution.—Northwestern North America, from British Columbia southward to northern California, Montana, and Utah.

30262. ROSA PISOCARPA Gray. **Rose.**

Distribution.—Northwestern North America, from British Columbia southward to Oregon and Nevada.

30263. ROSA FERRUGINEA Villars. **Rose.**

Distribution.—Slopes of the Pyrenees and the northern part of the Apennines and eastward to Servia.

30264. RUBUS AFFINIS Weihe and Nees.

Distribution.—Southeastern Sweden, in England, and in northern and western France.

30265. RUBUS SULCATUS Vest.

Distribution.—From the British Islands and the Scandinavian Peninsula southward through northern and central France to central Italy

See No. 30183 for previous introduction.

30266. TILIA PLATYPHYLLOS Scop.

Distribution.—Throughout central and southern Europe.

30267. TILIA PLATYPHYLLOS Scop.

Variety *asplenifolia*.

30268 to 30275.

From Port of Spain, Trinidad, British West Indies. Procured from Mr. H. Caracciolo, St. Joseph Nurseries. Received March 25, 1911.

Tubers of the following:

30268. DIOSCOREA sp. **Yampie.**

"*Cush-cush.* 'This is the finest root we have. It cooks very mealy and is delicious." (*Caracciolo.*)

30268 to 30275—Continued.

"The flesh is very white and of high quality, similar to that of the yampies of the Canal Zone and Jamaica (Nos. 29540 and 30091). The external appearance of the tubers is not quite so good as that of the variety from the Canal Zone, but is better than that of the Jamaica variety. The skin, under the surface, is pink or purplish. The size and form of the tubers received varied considerably. The largest weighed over 8 ounces." (*R. A. Young.*)

30269. Dioscorea sp. **Yam.**

"A yam of good quality. The flesh is perfectly white and is mealy when cooked." (*R. A. Young.*)

30270. Xanthosoma sp. **Yautia.**

Called *tannia* by Mr. Caracciolo.

"The tubers are large, sometimes weighing 1 pound, usually club shaped, have purplish-red sprouts, and are of good quality. The flesh when baked is much like that of a very white and mealy potato." (*R. A. Young.*)

30271. Colocasia sp. **Dasheen.**

"Some of the corms or rootstocks received were much elongated and very large, single specimens weighing up to 5¼ pounds. These large corms had evidently grown continuously for about two years. Both corms and tubers are of good quality, and when baked are white and mealy. They are slightly acrid when raw. The corm is scarcely different from the tuber in quality, although it is a trifle drier." (*R. A. Young.*)

30272. Colocasia sp. **Dasheen.**

"*Chinese eddo.* This is eaten also, but not in large quantities." (*Caracciolo.*)

"The corms and tubers are nonacrid and are of fair quality. When baked the flesh is mealy and white, except that in the corms it is sometimes slightly violet colored." (*R. A. Young.*)

30273. Colocasia sp. **Taro.**

Malanga. "This is not much liked here, as it scratches the mouth; but if dried for a day or two before cooking, it has not this effect." (*Caracciolo.*)

30274. Dioscorea sp. **Yampie.**

"A purple-fleshed variety found among the white-fleshed tubers (No. 30268) received from the same source. The external appearance of the varieties was identical." (*R. A. Young.*)

30275. Canna sp.

"*Perica Guaro.* This is the Spanish name, but the natives call it '*toloman*', others '*arrowroot*'." (*Caracciolo.*)

30276 to 30297.

From Paris, France. Presented by the Museum of Natural History. Received March 27, 1911.

Seeds of the following, procured for testing and breeding work:

30276. Phleum pratense L. **Timothy.**

30277. Phleum paniculatum Huds.

30278. Phleum paniculatum Huds.

30279. Platycodon grandiflorum (Jacq.) DC.

Variety *autumnale.*

30280. Coriaria myrtifolia L.

Distribution.—The countries along the northern shore of the Mediterranean from Spain to Greece, excepting Italy.

30276 to 30297—Continued.

30281. XANTHOCERAS SORBIFOLIA Bunge.

See Nos. 18264 and 22457 for previous introductions

30282. BERBERIS CANADENSIS Miller. **Barberry.**

30283. CHENOPODIUM AMARANTICOLOR Coste and Reynier.

30284. BETA TRIGYNA Waldst. and Kit.

30285. ARALIA CACHEMIRICA Decaisne.

Distribution.—A lax shrub found on the temperate slopes of the Himalayas at an altitude of 6,000 to 12,000 feet, between Sikkim and Kashmir in northern India.

30286. AUCUBA HIMALAICA Hook. f. and Thoms.

Distribution.—Damp places on the slopes of the Himalayas at an altitude of 6,000 to 9,000 feet, in the provinces of Bhutan and Sikkim, northern India.

30287. CORNUS BAILEYI Coult. and Evans.

30288. CORNUS BRETSCHNEIDERI Henry.

Distribution.—The Province of Chihli in northern China and in the southern part of Mongolia.

30289. CRATAEGUS AMBIGUA Becker. **Hawthorn.**

Distribution.—In the vicinity of Sarepta in the valley of the Volga in southeastern Russia.

30290. CRATAEGUS KOROLKOWI Regel. **Hawthorn.**

Distribution.—The vicinity of Peking, China.

30291. CRATAEGUS PENTAGYNA Waldst. and Kit. **Hawthorn.**

Distribution.—From Hungary and Servia eastward through the Caucasus region to northern Persia.

30292. COTONEASTER PYRACANTHA (L.) Spach.

Variety *lalandii*.

30293. CRATAEGUS sp. **Hawthorn.**

30294. CRATAEGUS TANACETIFOLIA (Poir.) Persoon. **Hawthorn.**

Distribution.—Slopes of the mountains in eastern Cappadocia and northern Armenia.

30295. CRATAEGUS TOMENTOSA L. **Hawthorn.**

30296. MELILOTUS ITALICA (L.) Lam.

30297. JUGLANS LAVELLEI Dode.

30298. PERILLA FRUTESCENS (L.) Britt.

From Utsunomiya, a city in the interior of Japan, about 80 miles distant from Yokohama. Procured by Mr. E. G. Babbitt, American vice consul general in charge, Yokohama, Japan. Received March 27, 1911.

"Yegoma. It is from this that the perilla oil, commonly known as *Yeno-abura*, or oil of yegoma, is obtained." (*Babbitt.*)

30299. AMYGDALUS PERSICA L. **Peach.**

From Shunking, Szechwan, China. Presented by Rev. A. E. Evans. Received March 28, 1911.

Cuttings.

30300. ASPARAGUS AFRICANUS Lam. **Asparagus.**

From Cedara, Natal, South Africa. Presented by Mr. E. R. Sawer, director, Division of Agriculture. Received March 28, 1911.

Introduced for the work of the Office of Truck-Crop Diseases in breeding a resistant asparagus, and also various forms for florists' use.

30301. NICOTIANA TABACUM L. **Tobacco.**

From the vicinity of Remedios, Cuba. Presented by Prof. Ramón Garcia Oses, director, Estacion Experimental Agronómica, Santiago de las Vegas, Cuba. Received March 29, 1911.

30302 to 30306.

From Comendador, Dominican Republic. Presented by Mr. M. E. Beall. Received March 27, 1911.

The following material; notes by Mr. Beall:

30302. XANTHOSOMA sp. **Yautia.**

"This is a much-prized vegetable here, producing large bulbs, white, sweet, starchy, the best substitute we have for the Irish potato. This is also a handsome foliage plant, giving forth large leaves like the elephant's ears (*Caladium esculentum*), with much the same habit of growth. In the South, after adorning the lawn until fall the folks can eat the bulbs and find them very good."

Bulbs.

30303. ANACARDIUM OCCIDENTALE L. **Cashew.**

"An acid fruit (two kinds, red and yellow) of very agreeable taste. The seeds when roasted are better than peanuts, but not as good as chestnuts. This may prove to be a different variety from what you have had. The tree grows rapidly and produces much fruit. I make excellent jelly of it."

Seeds.

30304. CHRYSOPHYLLUM CAINITO L. **Star-apple.**

"*Caimito.* A large tree of rather slow growth with a delicious, round, green fruit about the size of an orange. The leaves are dark, glossy green above and bronze on the under side, ovate in shape. The fruit is good to eat and the tree a delight to the eye."

30305. CUCURBITA PEPO L. **Pumpkin.**

"*Auyama.* A good edible variety, but the vines run over large areas. It withstands well both wet and dry weather."

30306. LAGENARIA VULGARIS Ser. **Gourd.**

"An immense gourd grown here. I have seen them half as large as a barrel. The natives use them with the point cut off for water jars. Cut through from top to bottom they are used for dish pans and bathtubs. If they mature in the Gulf States they will be valuable to the colored folks, for here they are indispensable."

30308 to 30364.

From Chinese Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, March 24, 1911.

Cuttings of the following:

30308. PYRUS sp. **Pear.**

From Khotan, Chinese Turkestan. "(No. 804, November 25, 1910.) A pear called *Amoot.* This is of medium size, knobby exterior, yellow color;

30308 to 30364—Continued.

meat soft and melting; ripe about early August; not of keeping qualities. Suitable for regions where hot, long summers prevail." (*Meyer.*)

30309. MALUS sp. **Apple.**

From Khotan, Chinese Turkestan. "(No. 805, November 25, 1910.) An apple called *Muzalma*. Of medium size; color yellowish green, of a peculiar glassy texture; taste sweet, but somewhat insipid; of good keeping qualities; ripens in autumn; able to withstand considerable drought and alkali." (*Meyer.*)

30310. PRUNUS ARMENIACA L. **Apricot.**

From Khotan, Chinese Turkestan. "(No. 806, November 25, 1910.) An apricot called *Yannana uruk*. Fruits medium large, dark red on one side, pale yellow on the other; taste fresh sweet, kernel sweet; rather a late variety.

"The Turkestan varieties of apricots seem all to be able to stand a fair amount of alkali in the soil and are not hurt by great fluctuations in temperature." (*Meyer.*)

30311. PRUNUS ARMENIACA L. **Apricot.**

From Khotan, Chinese Turkestan. "(No. 807, November 25, 1910.) An apricot called *Guama uruk*. Fruits large, of pale-yellow color; taste fresh sweet; late in ripening. Stone and kernel large, the latter sweet and very much sold in the markets of Chinese Turkestan, taking the place of almonds as sold in other countries." (*Meyer.*)

30312. PRUNUS ARMENIACA L. **Apricot.**

From Khotan, Chinese Turkestan. "(No. 808, November 25, 1910.) An apricot called *Kizil uruk*, meaning red apricot. Fruits medium large, of red color, late in ripening; kernel sweet. This can apparently stand more cold, alkali, and neglect than any other variety of apricot." (*Meyer.*)

30313. PRUNUS ARMENIACA L. **Apricot.**

From Khotan, Chinese Turkestan. "(No. 809, November 25, 1910.) An apricot called *Ak-uruk*, meaning white apricot. Fruits rather small, of pale-yellow color, early; can be used for drying; kernel sweet." (*Meyer.*)

30314. AMYGDALUS COMMUNIS L. **Almond.**

From Khotan, Chinese Turkestan. "(No. 810, November 25, 1910.) An almond called *Badam*. Fruits small, hard-shelled. This variety is able to stand much drought, alkali, and neglect." (*Meyer.*)

30315. PRUNUS DOMESTICA L. **Prune.**

From Khotan, Chinese Turkestan. "(No. 811, November 25, 1910.) A prune called *Alibuchara*. Fruits large, of deep-blue color, and subacid flavor; stands drought and alkali." (*Meyer.*)

30316. PRUNUS CERASUS L. **Cherry.**

From Khotan, Chinese Turkestan. "(No. 812, November 25, 1910.) A sour cherry called *Gilas*. Fruits small, of dark-red color, late in ripening. Very prolific; stands considerable alkali in the soil. The fruits are much used by the Russians in western Turkestan for compotes and jellies. Recommended for desert regions under irrigation." (*Meyer.*)

30317. PRUNUS TOMENTOSA Thunb. **Bush cherry.**

From Khotan, Chinese Turkestan. "(No. 813, November 25, 1910.) The red Chinese plum-cherry or bush cherry called in Turki, *Kizil genesta*. Fruits about as large as garden peas; very early; stand drought and alkali quite well.

30308 to 30364—Continued.

Of value, perhaps, in hybridization experiments. In Chinese Turkestan this fruit is propagated by division, but in North China it is budded on *Amygdalus davidiana*, and grows much faster in the latter case and stands drought and transplanting much better than on its own roots." (*Meyer.*)

30318. PRUNUS TOMENTOSA Thunb. **Bush cherry.**

From Khotan, Chinese Turkestan. "(No. 814, November 25, 1910.) A white variety of the Chinese plum-cherry, called in Turki, *Ak-genesta.* See remarks under No. 30317." (*Meyer.*)

30319. AMYGDALUS PERSICA L. **Peach.**

From Khotan, Chinese Turkestan. "(No. 816, November 25, 1910.) A peach called *Yama shabdalah.* Fruits large, of greenish color, juicy and sweet; early; apparently clingstone." (*Meyer.*)

30320. PRUNUS sp. **Plum.**

From Khotan, Chinese Turkestan. "(No. 820, November 25, 1910. A plum called *Kizil gilis.* This variety is red, of medium size; used dry and fresh; able to stand considerable drought." (*Meyer.*)

30321. PRUNUS ARMENIACA L. **Apricot.**

From Khotan, Chinese Turkestan. "(No. 821, November 25, 1910.) An apricot called *Kizil yananna uruk.* Fruits red, large, said to be of fine flavor. See remarks under No. 30310." (*Meyer.*)

30322. PRUNUS sp. **Plum.**

From Khotan, Chinese Turkestan. "(No. 822, November 25, 1910.) A dark-blue plum called *I-na-low.* Fruits of medium size, and acid taste. Mostly used in meat stews and as compotes." (*Meyer.*)

30323. PRUNUS ARMENIACA L. **Apricot.**

From Khotan, Chinese Turkestan. "(No. 823, November 25, 1910.) An apricot called *Ak-uruk.* Said to be distinct from No. 30313, as the fruits are larger and of finer flavor." (*Meyer.*)

30324. AMYGDALUS PERSICA L. **Peach.**

From Khotan, Chinese Turkestan. "(No. 824, November 25, 1910.) A peach called *Ak-shabdalah.* Fruits large, white, juicy, and aromatic; an early ripener." (*Meyer.*)

30325. AMYGDALUS PERSICA NECTARINA Ait. **Nectarine.**

From Khotan, Chinese Turkestan. "(No. 825, November 25, 1910.) *Fructi glabra.* A nectarine called *Dagatch.* Fruits red, of medium size, clingstone. This variety is of good keeping and shipping qualities." (*Meyer.*)

30326. MALUS sp. **Apple.**

From Khotan, Chinese Turkestan. "(No. 826, November 25, 1910.) An apple called *Muz-alma.* Said to be a large variety of No. 30309." (*Meyer.*)

30327. MALUS sp. **Apple.**

From Khotan, Chinese Turkestan. "(No. 827, November 25, 1910.) An apple called *Kizil alma.* Fruits medium large, red throughout; taste sweet, somewhat insipid. The trees do not grow to very large dimensions, but are able to stand drought, alkali, and neglect. To be experimented with in hot desert regions under irrigation." (*Meyer.*)

30308 to 30364—Continued.

30328. MALUS sp. **Apple.**

From Khotan, Chinese Turkestan. "(No. 828, November 25, 1910.) An apple called *Ak-alma*. Fruits of medium size, often large; color white; taste subacid, of fairly good flavor. Remarks under No. 30327 apply also to this number." (*Meyer.*)

30329. PYRUS CHINENSIS Lindl. (?) **Pear.**

From Khotan, Chinese Turkestan. "(No. 829, November 25, 1910.) A pear called *Nanshi'pt*. This is the celebrated Kutcha pear. It is of medium-large size, round-oval shape, and canary-yellow color with slight reddish blush. The flesh is of granular structure, fresh-sweet taste, and remarkably juicy. It is of excellent keeping and shipping qualities. To be tested in desert regions under irrigation." (*Meyer.*)

30330. MORUS NIGRA L. **Black mulberry.**

From Khotan, Chinese Turkestan. "(No. 830, November 25, 1910.) A mulberry called *Shatoot*. Berries large, of dark violet-black color, very persistent in their habits, almost every berry having to be picked by hand; taste fresh subacid; ripens from early August until the end of September. The trees are mostly grafted 1 meter above the ground so that the fruits may be easily gathered. Recommended as a home fruit in desert regions under irrigation." (*Meyer.*)

30331. JUGLANS REGIA L. **Walnut.**

From Khotan, Chinese Turkestan. "(No. 831, November 25, 1910.) A walnut called *Yang-ak*. A rather large variety, shells medium soft. Walnuts are grown in Chinese Turkestan at elevations from 4,000 to 7,000 feet above sea level. They are able to stand a fair amount of drought and alkali, and do not suffer from great extremes in temperatures. There are large regions in the southern Rocky Mountains where in all probability very profitable orchards could be established." (*Meyer.*)

30332. AMYGDALUS PERSICA NECTARINA Ait. **Nectarine.**

From Karghalik, Chinese Turkestan. "(No. 834, December 11, 1910.) Variety *fructi glabra*. A nectarine called *Anar-shabdalah*. Fruits rather small, whitish pink in color, and of sweet, aromatic flavor. This is a medium-late ripener and a rare local variety." (*Meyer.*)

30333. AMYGDALUS PERSICA L. **Peach.**

From Shagra-bazar, Chinese Turkestan. "(No. 836, December 23, 1910.) A peach called *Serech-shabdalah*. Fruits very large, of yellow color throughout; meat very firm; clingstone. Stands shipping well, but does not keep long; late in ripening (October)." (*Meyer.*)

30334. AMYGDALUS PERSICA NECTARINA Ait. **Nectarine.**

From Shagra-bazar, Chinese Turkestan. "(No. 837, December 23, 1910.) Variety *fructi glabra*. A nectarine called *Kizil-dagatch*. Fruits small, red; medium early." (*Meyer.*)

30335. AMYGDALUS PERSICA NECTARINA Ait. **Nectarine.**

From Upal, Chinese Turkestan. "(No. 838, December 26, 1910.) Variety *fructi glabra*. A nectarine called *Ak-tagatch*. Fruits large, white; a late ripener; of good keeping and shipping qualities. As Upal is about 5,000 feet above the sea, this nectarine may prove to be hardier than those from lower levels." (*Meyer.*)

30308 to 30364—Continued.

30336. AMYGDALUS PERSICA NECTARINA Ait. **Nectarine.**

From Yarkand, Chinese Turkestan. "(No. 839, December 19, 1910.) Variety *fructi glabra*. A nectarine called *Ak-dagatch*. Fruits medium-sized, of white color; clingstone; late in ripening; of good keeping and shipping qualities." (*Meyer.*)

30337. AMYGDALUS PERSICA L. **Peach.**

From Shagra-bazar, Chinese Turkestan. "(No. 840, December 24, 1910.) A peach called *Kok-shabdalah*. Fruits medium large, of greenish-white color; taste sweet; medium late; not a keeper. A local variety." (*Meyer.*)

30338. AMYGDALUS PERSICA L. **Peach.**

From Yarkand, Chinese Turkestan. "(No. 841, December 18, 1910.) A peach called *Taka-shabdalah*. Fruits very large, of whitish color with a slight blush; late in ripening; can be kept for several weeks; locally considered a fine variety." (*Meyer.*)

30339. AMYGDALUS PERSICA L. **Peach.**

From Karawag, Chinese Turkestan. "(No. 844, December 10, 1910.) A peach called *Ak-shabdalah*. Fruits large, white in color; flavor very sweet and pleasing; early in ripening." (*Meyer.*)

30340. AMYGDALUS PERSICA L. **Peach.**

From Karawag, Chinese Turkestan. "(No. 845, December 10, 1910.) A peach called *Ais-shabdalah*. Fruits large, pinkish white; meat firm, sweet; clingstone. It is said here that it can be kept for several months." (*Meyer.*)

30341. AMYGDALUS PERSICA NECTARINA Ait. **Nectarine.**

From Upal, Chinese Turkestan. "(No. 846, December 26, 1910.) Variety *fructi glabra*. A nectarine called *Kizil tagatch*. Fruits large, red throughout; meat firm; of good keeping and shipping qualities. See remarks under No. 30335 as to hardiness." (*Meyer.*)

30342. PRUNUS ARMENIACA L. **Apricot.**

From Karawag, Chinese Turkestan. "(No. 849, December 10, 1910.) An apricot called *Yannala uruk*. Fruits large, red in color; ripe in July; kernels sweet. A very vigorous grower." (*Meyer.*)

30343. PRUNUS ARMENIACA L. **Apricot.**

From Karawag, Chinese Turkestan. "(No. 850, December 10, 1910.) A local variety of apricot called *Kayu-pomak uruk*. Fruits large, red; ripening the end of June." (*Meyer.*)

30344. PRUNUS ARMENIACA L. **Apricot.**

From Burya-Lyang, Chinese Turkestan. "(No. 851, December 8, 1910.) An apricot called *Kara-yuk-pomak uruk*. Fruit large, dark red, very sugary; ripens medium early; can be dried and kept." (*Meyer.*)

30345. PRUNUS ARMENIACA L. **Apricot.**

From Karawag, Chinese Turkestan. "(No. 852, December 10, 1910.) An apricot called *Ak-yarlik uruk*. Fruits large, of pale color; ripens in July. A local variety." (*Meyer.*)

30346. PRUNUS ARMENIACA L. **Apricot.**

From Tash-malah, Chinese Turkestan. "(No. 853, December 24, 1910.) An apricot called *Ak-uruk*. Fruits large, of pale-yellow color; ripens the latter part of July; can be dried; kernels sweet. This particular variety is considered locally to be extra good." (*Meyer.*)

30308 to 30364—Continued.

30347. PRUNUS ARMENIACA L. **Apricot.**

From Karawag, Chinese Turkestan. "(No. 855, December 10, 1910.) A local variety of apricot called *Ghondak-uruk*. Fruits of medium size, blood red in color; very early." (*Meyer.*)

30348. PRUNUS ARMENIACA L. **Apricot.**

From Tash-malah, Chinese Turkestan. "(No. 856, December 24, 1910.) A local variety of apricot called *Anjan-uruk*. Fruits medium large, red; a late ripener." (*Meyer.*)

30349. PRUNUS DOMESTICA L. **Prune.**

From Yarkand, Chinese Turkestan. "(No. 857, December 18, 1910.) A large variety of prune called *I-nar-low*. Fruits good sized, deep blue in color; late in ripening; used stewed with meat as a compote and also as a sweetmeat. To be tested in desert regions under irrigation." (*Meyer.*)

30350. PRUNUS DOMESTICA L. **Prune.**

From Yarkand, Chinese Turkestan. "(No. 858, December 18, 1910.) A prune called *I-nar-low*. Smaller than No. 30349, otherwise the same remarks apply to it." (*Meyer.*)

30351. PYRUS CHINENSIS Lindl. (?) **Pear.**

From Yarkand, Chinese Turkestan. "(No. 859, December 18, 1910.) A pear called *Nanshi'pt*. Fruits large to very large, of greenish-yellow color, somewhat blotched with green patches; flesh granular, but melting when fully ripe; taste fresh sweet; a late ripener; can be kept for several months. Stands extremes of temperatures well; to be tested under irrigation in desert regions." (*Meyer.*)

30352. PYRUS CHINENSIS Lindl. (?) **Pear.**

From Karawag, Chinese Turkestan. "(No. 860, December 10, 1910.) A pear called *Nanshi'pt*. Fruits large, of round-oblong shape; color bright yellow; flesh somewhat gritty, but of fresh-sweet taste and good flavor; a good keeper. To be tested like the other numbers." (*Meyer.*)

30353. MALUS sp. **Apple.**

From Karawag, Chinese Turkestan. "(No. 861, December 10, 1910.) An apple called *Muz-alma*, meaning ice apple; apparently the same as No. 30309. When the trees get old they spread considerably, and their branches become long and slender." (*Meyer.*)

30354. PUNICA GRANATUM L. **Pomegranate.**

From Karawag, Chinese Turkestan. "(No. 864, December 10, 1910.) A pomegranate called *Atchiek*. Fruits very large, often the size of a child's head; color bright red; taste sour. A very ornamental fruit, excellent for display in the windows of fruit stores; can be kept and shipped with great facility." (*Meyer.*)

30355. PRUNUS ARMENIACA L. **Apricot.**

From Khanaka, Chinese Turkestan, Oasis of Sandju. "(No. 890, December 3, 1910.) An apricot called *Kizil uruk;* can be used dried. The climate in Khanaka, which is about 6,000 feet above sea level, is so cool that melons, grapes, and peaches do not ripen here. This variety of apricot manages to ripen, however, toward the end of August. For this reason it deserves to be given a thorough test, especially in the western parts of the United States; also to be tried in hybridization experiments with native plums, so as to create new

30308 to 30364—Continued.

strains of garden fruits fit to stand severe cold. The wild apricots from Manchuria and northern Chosen might be taken for stocks, and native hardy plums might also be tested for this purpose.

"On the grounds of the experiment station at Madison, Wis., there stands a large apricot tree, perhaps 40 years old, which came from central Asia, and this fact seems to show that apricots are less tender than they are supposed to be." (*Meyer.*)

30356. PRUNUS sp. **Plum.**

From Kashgar, Chinese Turkestan. "(No. 891, January 10, 1911.) A plum called *Alutcha;* apparently a very rare and probably new central Asian variety, obtained from the garden of the Hon. Geo. Macartney, British consul at Kashgar. The fruits are medium large, of golden-yellow color, fine flavor; clingstone; ripens early (latter part of July); can be kept for a few months. They are excellent for preserves and jellies." (*Meyer.*)

30357. AMYGDALUS PERSICA L. **Peach.**

From Kashgar, Chinese Turkestan. "(No. 892, January 10, 1911.) A large, red, freestone peach, fine flavored; a medium-late ripener, and a most prolific bearer. Obtained from the same source as No. 30356." (*Meyer.*)

30358. AMYGDALUS PERSICA L. **Peach.**

From Kashgar, Chinese Turkestan. "(No. 893, January 10, 1911.) A large, pale reddish, freestone peach of very fine flavor; medium-late ripener; not a keeper. Obtained like No. 30356. (*Meyer.*)

30359. AMYGDALUS PERSICA NECTARINA Ait. **Nectarine.**

From Kashgar, Chinese Turkestan. "(No. 894, January 10, 1911.) Variety *fructi glabra.* A very large, red, clingstone nectarine; late ripener; can be kept for several weeks after being fully ripe. Obtained like No. 30358." (*Meyer.*)

"These three preceding numbers were especially recommended to me by Mr. Macartney for their excellence." (*Meyer.*)

30360. PYRUS CHINENSIS Lindl. **Pear.**

From Kashgar, Chinese Turkestan. "(No. 895, January 11, 1911.) A small, angular-shaped, bright-yellow pear called *Kuttera amoot.* Flesh soft, melting, and of good flavor; ripens in early August and lasts only a few weeks; not a keeper. The trees are of a rather spreading growth and require considerable space to do well. Obtained from the garden of the Swedish Missionary Society at Kashgar." (*Meyer.*)

30361. PYRUS CHINENSIS Lindl. **Pear.**

From Kashgar, Chinese Turkestan. "(No. 896, January 11, 1911.) A pear called *Kok-amoot* or green pear. This grows to be very large and is of an irregular, knobby shape; green in color; texture gritty. Not edible when hard, but when soft its flesh becomes palatable; has good keeping and shipping qualities. May be used in breeding experiments. Obtained like No. 30360." (*Meyer.*)

30362. PRUNUS TOMENTOSA Thunb. **Bush cherry.**

From Kashgar, Chinese Turkestan. "(No. 897, January 11, 1911.) A plum-cherry called *Ak-genesta.* This is a larger variety than the one sent under No. 30318, otherwise the same remarks apply to it. Obtained like No. 30360." (*Meyer.*)

30308 to 30364—Continued.

30363. PRUNUS TOMENTOSA Thunb. **Bush cherry.**

From Kashgar, Chinese Turkestan. "(No. 898, January 11, 1911.) A plum-cherry called *Kizil genesta*. This is a larger and more vigorous variety than the one sent under No. 30317, otherwise the same remarks apply to it. Obtained like No. 30360." (*Meyer.*)

30364. ULMUS CAMPESTRIS L. **Elm.**

From Kashgar, Chinese Turkestan. "(No. 900, January 11, 1911.) Variety *umbraculifera*. A grafted, globular form of elm called *Seda*. Much grown near mosques and in gardens of the rich. Forms a dense head of foliage; is able to stand drought and a fair amount of alkali quite well; recommended as an ornamental and shade tree of conventional outlines for desert regions under irrigation. Obtained like No. 30360." (*Meyer.*)

30365. DIOSPYROS TESSELLARIA Poir.

From Reduit, Mauritius. Presented by Mr. H. Boname, director, Agronomic Station. Received March 31, 1911.

"These seeds are very difficult to procure. The tree is not widely scattered and does not occur except in the mountains of certain localities, where the monkeys usually eat the fruits before their complete maturity." (*Boname.*)

30366. STRYCHNOS TONGA Gilg.

From Amani, German East Africa. Presented by the director, Biological Land Institute. Received March 29, 1911.

Introduced for trial compared with the other edible-fruited species of the genus, some of which will probably prove excellent shippers.

Distribution.—A tree found on the east coast of Africa in the vicinity of Quilimane in the Mozambique region, and in the vicinity of Pangani in the Zanzibar district.

30367. CITRUS DECUMANA (L.) Murr. **Pomelo.**

From Haiti. Presented by Commander Phillip Andrews, Navy Department, Washington, D. C. Received March 28, 1911.

(P. No. 50411.) A deep-yellow variety, very fine.

30370 to 30392.

From Tunis, Tunis. Presented by Mr. L. Guillochon, Jardin d'Essais de Tunis. Received March 31, 1911.

Seeds of the following, procured for experimental tests and breeding work:

30370. MIMOSA ACULEATICARPA Ortega (?)

30371. ACACIA CYANOPHYLLA Lindl.

See No. 1793 for previous introduction.

Distribution.—The valley of the Swan River in West Australia.

30372. ACACIA EBURNEA (L.) Willd.

See No. 1799 for previous introduction.

Distribution.—Southern Asia, extending from Arabia and Afghanistan eastward through India to Ceylon.

30373. ACACIA LINIFOLIA (Vent.) Willd.

Distribution.—The valley of the Brisbane River in Queensland, and from Port Jackson to the Blue Mountains in New South Wales, Australia.

30370 to 30392—Continued.

30374. ACACIA RETINODES Schlecht.

See No. 6666 for previous introduction.

Distribution.—Grassy ridges and open valleys throughout the provinces of Victoria and South Australia in Australia.

30375. ACACIA SPHAEROCEPHALA Cham. and Schiecht.

Distribution.—In the vicinity of Vera Cruz, Mexico.

30376. ACACIA ARABICA (Lam.) Willd.

See No. 26162 for description.

30377. ANNONA CHERIMOLA Miller (?) **Cherimoya.**

30378. ASPARAGUS SPRENGERI Regel. **Asparagus.**

See Nos. 30011, 30015, and 30221 for previous introductions.

30379. CASUARINA STRICTA Dryand. **Coast she-oak.**

Distribution.—Southwestern Australia, in the provinces of New South Wales, South Australia, and Victoria, and in Tasmania.

30380. CASUARINA TORULOSA Dryand. **Forest she-oak.**

See No. 1304 for previous introduction.

Distribution.—In the valleys of Queensland, New South Wales, and South Australia.

30381. CHENOPODIUM AMARANTICOLOR Coste and Reynier.

See No. 30283 for previous introduction.

30382. CUPRESSUS SEMPERVIRENS L. **Evergreen cypress.**

30383. CUPRESSUS SEMPERVIRENS L. **Evergreen cypress.**

Variety *fastigiata.*

30384. CUPRESSUS LUSITANICA Miller.

Distribution.—Supposed to be a native of the vicinity of Goa, India; of general cultivation.

30385. EUCALYPTUS GOMPHOCEPHALA DC. **Towart gum.**

See No. 2988 for description.

Distribution.—In the valleys of the Swan and Murchison rivers in West Australia.

30386. GOURLEIA SPINOSA (Mol.) Skeels.

See No. 24631 for description.

30387. JACARANDA MIMOSIFOLIA Don.

A shrub with purple flowers in large panicles.

Distribution.—From Brazil and Argentina.

30388. CAESALPINIA GILLIESII (Hook.) Wallich.
(*Poinciana gilliesii* Hook.)

See No. 3530 for previous introduction.

Distribution.—In the vicinity of Mendoza, western Argentina, in Uruguay, and Chile.

30389. QUERCUS ILEX L. **Evergreen oak.**

See No. 3036 for description.

Distribution.—The countries of southern Europe, northern Africa, and western Asia bordering on the Mediterranean.

30370 to 30392—Continued.

30390. SOPHORA JAPONICA L.

See No. 20093 for description.

30391. SOPHORA SECUNDIFLORA (Ort.) DC.

See No. 3212 for description.

30392. ZIZIPHUS MAURITIANA Lam.

See No. 28129 for previous introduction.

30393 to 30415.

From Chinese Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, March 31, 1911.

Seeds of the following:

30393. HORDEUM VULGARE HIMALAYENSE Rittig. **Barley.**

From Serik-Kol, Chinese Turkestan. "(No. 1488a, January 10, 1911.) A small quantity of hull-less summer barley grown in a dry mountain valley at elevations from 7,000 to 9,000 feet above sea level. Obtained through the Hon. George Macartney, British consul at Kashgar." (*Meyer.*)

30394. PISUM SATIVUM L. **Pea.**

From Khotan, Chinese Turkestan. "(No. 1499a, November 26, 1910.) A green pea called *Puchok*. Grown on sandy and alkaline lands." (*Meyer.*)

30395. MEDICAGO SATIVA L. **Alfalfa.**

From Pustan Terek, Chinese Turkestan, altitude 6,000 to 7,000 feet. "(No. 1509a, December 30, 1910.) A yellow-flowering alfalfa, growing as a weed between wheat; called *Serech beda*, meaning yellow lucern. As the climate in the Pustan Terek region is very much like that of the Manitou region of Colorado, this plant might be tested in the Rocky Mountain regions." (*Meyer.*)

30396. CITRULLUS VULGARIS Schrad. **Watermelon.**

From Karawag, Chinese Turkestan. "(No. 1519a, December 10, 1910.) A watermelon of remarkable keeping qualities; ripens toward the end of September and can be kept until May; of medium size, round-oval shape; very thick rind; dark sea green in color; slightly ribbed near peduncle; color of flesh salmon red; taste fresh sweet; seeds large, white with two black spots at the tapering end. To be tested in the desert regions of the United States under irrigation." (*Meyer.*)

30397. CITRULLUS VULGARIS Schrad. **Watermelon.**

From San Kia, Chinese Turkestan. "(No. 1520a, November 17, 1910.) A large variety of watermelon. Shape round; rind medium thick; of light-green color; flesh pale red; of fresh-sweet taste; seeds large, black; possesses good keeping and shipping qualities. To be tested like the preceding number." (*Meyer.*)

30398. CITRULLUS VULGARIS Schrad. **Watermelon.**

From Kashgar, Chinese Turkestan. "(No. 1521a, January 28, 1911.) A watermelon of medium size; shape round; rind dark green, thick; flesh pale red, of fresh-sweet taste; seeds red; a late ripener; keeps well for several months. To be tested like the preceding numbers." (*Meyer.*)

30399. CUCUMIS MELO L. **Muskmelon.**

From Shagran-bazar, Chinese Turkestan. "(No. 1525a, December 23, 1910.) A small, round melon; ripens very early; flesh of greenish color, very sweet. Called *Nachika*." (*Meyer.*)

30393 to 30415—Continued.

30400. Cucumis melo L. **Muskmelon.**

From Shagran-bazar, Chinese Turkestan. "(No. 1526a, December 23, 1910.) An early melon of small size and oval shape; flesh white and very sweet. Called *Ak-Kutcha.*" (*Meyer.*)

30401. Cucumis melo L. **Muskmelon.**

From Shagran-bazar, Chinese Turkestan. "(No. 1528a, December 23, 1910.) A rather large, oval-shaped, medium-late melon; rind yellowish green; flesh salmon red, of fresh-sweet taste. Possesses excellent shipping and keeping qualities; obtainable throughout the whole winter. Called *Serech yoïs.*" (*Meyer.*)

30402. Cucumis melo L. **Muskmelon.**

From Kashgar, Chinese Turkestan. "(No. 1529a, January 28, 1911.) A winter melon of oval shape, medium large; rind green; flesh white, firm, and of fresh-sweet taste; a very good shipper and keeper. These melons are sold on the markets of Turkestan until May. Called *Yeïs.*" (*Meyer.*)

30403. Cucumis melo L. **Muskmelon.**

From Kashgar, Chinese Turkestan. "(No. 1531a, January 28, 1911.) A small melon, said to be the earliest of all. Flesh white; taste aromatic and sweet. Called *Kutchak kokchi.* (*Meyer.*)

30404. Cucumis melo L. **Muskmelon.**

From Kashgar, Chinese Turkestan. "(No. 1532a, January 28, 1911.) An early melon of medium size; flesh white, very sweet. Called *Mecca.*" (*Meyer.*)

30405. Cucumis melo L. **Muskmelon.**

From Kashgar, Chinese Turkestan. "(No. 1533a, January 28, 1911.) A flat muskmelon; small; very early; flesh whitish, fragrant. Called *Khanalak.*" (*Meyer.*)

30406. Cucumis melo L. **Muskmelon.**

From Kashgar, Chinese Turkestan. "(No. 1534a, January 28, 1911.) A small, early ripening melon; flesh white; of very sweet, fresh taste. Called *Ak-kand,* meaning white sugar." (*Meyer.*)

30407. Juglans regia L. **Walnut.**

From Khotan, Chinese Turkestan. "(No. 1535a, November 24, 1910.) A very large, medium hard-shelled walnut. Walnuts in Turkestan are always propagated from seed, and there is a very great amount of variation to be observed in the size of the nuts and the habits of the various trees.

"See remarks made under No. 30331 in regard to possible localities for walnut orchards." (*Meyer.*)

30408. Amygdalus communis L. **Almond.**

From Yarkand, Chinese Turkestan. "(No. 1536a, November 7, 1910.) A variety of almond imported from northern India and used for medicinal purposes. Called *Hindustan badam.* May be of value as a stock. It seems to be either a wild type or a very primitive strain." (*Meyer.*)

30409. Prunus sp. **Plum.**

From Khotan, Chinese Turkestan. "(No. 1542a, November 23, 1910.) A variety of plum called *Kayuk.* Eaten as a sweetmeat; also stewed with meats and made into compote. Able to stand extremes of temperatures and some alkali in the soil or irrigation water." (*Meyer.*)

30393 to 30415—Continued.

30410. PRUNUS DOMESTICA L. **Prune.**

From Kashgar, Chinese Turkestan. "(No. 1544a, January 11, 1911.) A small prune growing well on rather alkaline land. Used in sweetmeats and in compote." (*Meyer.*)

30411. ZIZIPHUS JUJUBA Miller. **Jujube.**

From Khotan, Chinese Turkestan. "(No. 1545a, November 24, 1910.) The Chinese date called *Tchi-lan;* sparingly grown here and there in Chinese Turkestan." (*Meyer.*)

30412. ELAEAGNUS ANGUSTIFOLIA L. **Oleaster.**

From Kashgar, Chinese Turkestan. "(No. 1547a, Jan. 28, 1911.) A large variety of oleaster; fruits pale orange in color. Recommended as a fruit tree for the home garden in arid and alkaline regions, supplying sweetmeats for the children." (*Meyer.*)

30413. BERBERIS sp. **Barberry.**

From Khotan, Chinese Turkestan. "(No. 1548a, Nov. 24, 1910.) The fruits of this barberry are sold on the market in Khotan under the name of *Zich.* They are used ground as a spice on rice, boiled with sugar and eaten as a compote, stewed with meats, and steeped in boiling water like tea and the beverage, with some sugar added, drunk as a refreshing summer draft. The plant is apparently able to stand great drought and heat. Recommended as an ornamental shrub in semiarid regions of America." (*Meyer.*)

30414. FRAXINUS sp. **Ash.**

From Khotan, Chinese Turkestan. "(No. 1551a, Nov. 26, 1910.) A tall-growing ash, native name *I-mo-don;* able to stand considerable drought and alkali; of value as a shade and timber tree in those sections of the United States where the summers are hot and dry and the winters not too cold. Some of the seeds should also be tested in a cold region like the upper Mississippi Valley." (*Meyer.*)

30415. HALIMODENDRON HALODENDRON (Pallas) Voss.

From near Kuk-rabat, Chinese Turkestan. "(No. 1553a, Nov. 4, 1910.) A very spiny, leguminous, Colutea-like shrub, occurring here and there in cliffs and on alkaline soil; also sparingly utilized as a hedge plant; to be experimented with as a hedge plant in the dry, hot parts of the United States." (*Meyer.*)

30416 to 30419. COLOCASIA sp. **Dasheen.**

From Mayaguez, Porto Rico. Presented by Mr. C. F. Kinman, horticulturist, Agricultural Experiment Station. Received March 30, 1911.

Tubers of the following; quoted notes by Mr. R. A. Young:

30416. "A nonacrid dasheen having pink sprouts. The tubers are variable in size, some weighing as much as 10 ounces. They are very white when cooked, but have little flavor."

30417. "The qualities of this variety are similar to the preceding, but there were no large tubers in this lot."

30418. "A nonacrid variety of dasheen, similar to the more common Japanese sorts, having white sprouts, and being of rather inferior quality when cooked. The size of the tubers received varied, but none weighed over 6 ounces."

30416 to 30419—Continued.

30419. "This variety has slightly acrid tubers somewhat like the *Yegu-imo* (No. 21646), but otherwise is similar to the preceding."

NOTE.—The Porto Rico Agricultural Experiment Station was unable to give definite data regarding the origin of the Colocasia varieties mentioned, as the labels in their collection had become more or less mixed. (*Young.*)

30420. HORDEUM VULGARE L. **Bearded barley.**

From St. Petersburg, Russia. Presented by Mr. Robert Regel, Bureau of Applied Botany. Received March 11, 1911.

Black.

30421 to 30429.

From Canton, China. Presented by Mr. G. Weidman Groff, Canton Christian College. Received March 29 and 30, 1911.

Notes and native names on this material furnished by Mr. Groff.

30421. SAGITTARIA SAGITTIFOLIA L.

"*Chi koo.* In propagating the *Chi koo* the Chinese plant the bulb, which develops into a strong plant about 1 foot high. This they plant in the first or second month. In about three or four months the plant develops underground rootstocks, which are separated from the mother stalk and planted in rows about 2 feet apart. The preparation of the soil is much like that of rice, the plants standing in water. A sandy or loamy soil is desirable. The Chinese are very fond of the tubers, which they boil with beef or pork."

30422. XANTHOSOMA sp. **Yautia.**

"*Paan long heung woo.*" "The tubers received were small, twice as long as thick, and had purplish-red sprouts; flesh white inside but purplish next to skin; very slightly acrid; flavor good, more distinctive than in most yautias." (*R. A. Young.*)

30423. SAGITTARIA SAGITTIFOLIA L.

From Kweilin, Kwangsi. "*Ma tai.* This is grown in much the same way as the *Chi koo* (No. 30421). They are very good boiled with meat. The Chinese eat them raw, too. Kweilin, the capital of Kwangsi, is famous for a variety of Ma tai, and these come from that country."

30424. (Undetermined.)

"*Kot shue* variety *Fan kot.* These are planted much like sweet potatoes and are an excellent tuber. The Chinese are very fond of them as food. The tuber is often ground into flour from which a porridge is made. The tubers are also eaten with pork, etc."

30425 and 30426. ZIZANIA LATIFOLIA (Griseb.) Stapf. **Wild rice.**

30425. "*Kau sun* variety *Tseng mau* (green)."

30426. "*Kau sun* variety *Wong mau* (yellow)."

30427. CITRUS sp. **Orange.**

"*Lau-chaang.*"

30428. AMYGDALUS PERSICA L. **Peach.**

"*Ha mat to.*"

30429. CITRUS JAPONICA Thumb. **Kumquat.**

"*Kum* variety *Tim kum.*"

30430 to 30432. HORDEUM spp. **Barley.**

Grown on the experimental grounds at Verrières, Switzerland; presented by Vilmorin-Andrieux & Co., Paris, France; received March 4, 1911.

Seeds of the following:

30430. HORDEUM VULGARE CORNUTUM Schrader.

30431. HORDEUM VULGARE HORSFORDIANUM Wittmack.

Excelsior.

30432. HORDEUM VULGARE TRIFURCATUM (Schlecht.) Beaven.

30433 to 30436. MEDICAGO FALCATA L. **Siberian alfalfa.**

Procured from Mr. Rasul Galwan, Leh, Ladakh, Kashmir, British India; received February 27, 1911.

Seeds of the following; notes by Mr. Galwan:

30433. From Ladakh, good seed.

30434. From Ladakh, poor seed.

30435. From Yarkand, Chinese Turkestan, very good seed.

30436. From Kargil, British India, poor seed.

30437 to 30461.

From Togo, German West Africa; presented by Dr. Meyer, governor of Togo; received March 25, 1911.

Seeds of the following; quoted names by Dr. Meyer; descriptions of varieties by Mr. Carleton R. Ball. Nos. 30437 to 30455, 30458, and 30459 from the Sansane-Mangu district; Nos. 30456, 30457, 30460, and 30461 from the region of Kete-Kratschi.

30437 to 30457. ANDROPOGON SORGHUM (L.) Brot.

30437. "*Banambo.*" The two heads sent under this number are not alike, one having white seeds and light-brown hulls and the other white seeds and very dark-brown or entirely black hulls. The name corresponds with that of No. 25332, but the seed does not. Head about 10 inches long.

30438. "*White ayiroa.*" Head 15 inches long, slender, with black glumes and white seeds.

30439. "*Red ayiroa.*" Head about 15 inches long, with dark-brown glumes and brick-red seeds. Resembles No. 30453 in seed and glume characters.

30440. "*Dark Sayirunga* from Tamberma." Heads about 12 to 14 inches long, with dark-brown glumes and buff and reddish-buff seeds.

30441. "*White Sayirunga* from Tamberma." Heads about 12 inches long; seeds white; one of the heads has deep-brown to black glumes and the other brown or light-brown glumes.

30442. "*Tebate* from Tamberma." Apparently identical with No. 25337, which was received under the name *Pebate.*

30443. "*Ehijeto*, yellow from Tamberma." Identical with No. 25341.

30444. "*Langpatege.*" Apparently identical with No. 25336, except in having reddish-brown hulls.

30445. "*Sotemondi*, red and white." Two heads received, one identical with No. 25342, the other very similar, but having white seeds. Heads small, 4 to 5 inches long, 2 inches wide; compact.

30437 to 30461—Continued.

30446. "*Beninga.*" Head short, 8 inches long; 3½ inches wide; probably identical with No. 25340; the glumes, however, are brown instead of black.

30447. "*Somong.*" Identical in name and appearance with No. 25335, except in having paler hulls.

30448. "*Tebate*, dark." Almost identical in appearance with No. 25335.

30449. "*Kotunda*, from Moba." Long, slender heads, reddish-yellow seeds, and short, black glumes appressed at the tips, some resembling No. 25335.

30450. "*Dyeripin*, from Moba." Slender, loose head about 10 to 12 inches long; white seeds and black, involute, pointed glumes. Apparently identical with No. 25328.

30451. "*Aparku safoe*, white." Name and appearance identical with No. 25328.

30452. "*Aparku ganz*, red." Head typical; seeds pale salmon; glumes black, involute. Seeds much paler in color than No. 25329, received under this name.

30453. "*Tyentyenyork.*" Identical with No. 25333, received under the same name.

30454. "*Yoch* (Yopienge)." Nearly identical with No. 25334, received under a very similar name, differing in having smaller seeds and darker glumes.

30455. "*Nyumbayone* (from Bimbe)." Received under the same name as No. 25339, which it resembles in having two seeds in each spikelet and in the short, obtuse, black glumes. It differs, however, in having smaller, less flattened seeds, which are pale lemon instead of white.

30456. Practically identical with No. 30453.

30457. A mixture of dirty white with a smaller quantity of paler red seeds, both belonging to variety *elegans*.

30458 to 30461. PENNISETUM AMERICANUM (L.) Schum. **Pearl millet.**

30458. "*Nyepe*, dark."

30459. "*Nyepe*, white."

30460. (No name.)

30461. (No name.)

29930. Perdicium niveum (DC.) Skeels.

30040. Eugenia dombeyi (Sprengel) Skeels.

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